WELLESLEY COLLEGE

THE

RUHLMAN

20th

RUHLMAN

CONFERENCE

A CELEBRATION OF
STUDENT ACHIEVEMENT

APRIL 27, 2016
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The 2015–16 Program Committee for the Ruhlman Conference

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Office of International Education
Class of 2016

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Office of the Class Deans
Class of 2016

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Office of the Class Deans

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Computer Science Department

Rebecca Sparks
Office of the Provost and Dean of the College

Sheila Zarba-Campbell
Office for Resources

THE RUHLMAN CONFERENCE

2016

It gives us great pleasure to welcome you to the 2016 Ruhlman Conference. Made possible by the Barbara Peterson Ruhlman Fund for Interdisciplinary Study, the Ruhlman Conference is intended to foster collaboration among students and faculty across the disciplines and to enhance the intellectual life of the College. The event provides an opportunity for students, faculty, staff, friends, family, and alumnae to come together in celebration of student achievement.

The Ruhlman Conference celebrates intellectual life by sponsoring a communal, public event where students have an opportunity to present their work to an unusually wide audience. By providing an opportunity for public presentation of what is often a private, isolated activity, the conference demonstrates that research can be part of the ongoing conversation in a community of scholars.

Attentive to the diversity of student interest and accomplishment, the Ruhlman Conference includes a variety of forms for the presentation of student work: papers, panels, posters, exhibitions, musical and theatrical performances, interactive teaching presentations, and readings of original work. Representing the work of nearly 300 Wellesley students, the Ruhlman Conference is organized around three major themes: Humanities, Science and Technology, and Social Sciences.

We invite you to celebrate the 20th annual Ruhlman Conference by experiencing the scope and richness of student achievement at this year’s conference. In addition, we invite you to the Alumnae Ballroom throughout the day to dynamically explore the history and vision of the Ruhlman Conference using the interactive, multi-touch Ruhlman Explore computer application that celebrates Ruhlman presenters from across the years. We wish to express our thanks and congratulations to all students and alumnae, near and far, for their participation in this special event.

Biography of Barbara Peterson Ruhlman ’54

Barbara Ann Peterson was born to Thomas and Ethel Peterson in 1932 in Worcester, Mass., and lived there for her first nine years. The family moved to Shaker Heights, Ohio, where Barbara graduated from Laurel School before enrolling at Wellesley in the class of 1954. A psychology major, Barbara lived in Homestead and Severance before spending her junior and senior years in Claflin Hall.

Of her time at Wellesley, Barbara wrote in 2004, “Fifty-four years ago when I entered Wellesley, it was a dream come true…. Four years at Wellesley were wonderful, rewarding, but not without their ups and downs, and much hard work, which helped me become a stronger, more confident person.”

Barbara deployed her psychology degree as a hospital social worker before marrying former Air Force Lieutenant Jon Ruhlman in 1955. Jon was a graduate of Purdue University with a graduate degree from the University of Colorado. Together, Jon and Barbara raised two sons, Robert and Randall, while Jon pursued a career in business. Barbara took on numerous volunteer leadership roles in the arts, education, health care, and more in her community. Barbara and Jon avidly pursued their loves of sailing, global travel, and spending time with their two grandchildren together. Sadly, Jon passed away in 2004.

To this day, Barbara has remained closely connected to Wellesley College through her philanthropy, her volunteer service, and her participation in class Reunions and mini-reunions, of which she has written, “I have enjoyed reconnecting with classmates I knew years ago and meeting some for the first time…. I treasure my new friends, and those I have had for many years, as they provide a great source of strength and stability.”

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The first Ruhlman Conference was held on the afternoon of May 1, 1997. Looking back on that day, the 150 students who volunteered to participate in the inaugural conference—and the more than 50 faculty who served as their advisors—were creating a new Wellesley tradition. In the months preceding the conference, members of the program committee had worried that it might be difficult to recruit students to participate in this ambitious communal experiment. Indeed, that was the question on Barbara Ruhlman’s mind throughout much of the year. Once the day of the conference arrived, however, a new question came to occupy their minds: What if no one attended? The conference had been organized into concurrent sessions scheduled from 3 pm to 7 pm and, because no change to the class schedule was made that day, late-afternoon classes overlapped with the first block of conference presentations. At a place already over-populated with lectures, performances, and other community events, who would be interested in attending yet another optional event? Many were. The student, faculty, and staff turnout that afternoon was respectable, if not large, and faculty and staff outnumbered students in most sessions. Of greater significance, both participants and attendees of the first conference left with the impression first conference left with the impression that they had participated in something special, urging those in charge of planning the conference to find ways to increase involvement among all constituencies of the College. The following year the conference was scheduled for a day on which no classes would be held, the number of blocks of concurrent sessions was increased, and a community-wide lunch was added. The number of students presenting at the conference rose to 250, and the number of faculty and staff advisors doubled (to 100), as did the number of sessions. In the years to follow, the conference would consistently attract between 250-300 student participants sponsored by well over 100 faculty and staff, representing virtually every academic department and program of the College.

Why was the Ruhlman Conference such a success? A student on the first program committee provided insight into that question when she suggested that “Wellesley was a very academic place, but it wasn’t as intellectual as it might be.” By that, we believe she meant that Wellesley students set high academic standards for themselves and their peers, that they worked hard to achieve those standards—but that they spent more time talking about how hard they worked than about what they were working on. Although the Ruhlman Conference provided a venue to applaud and celebrate the hard work necessary to produce excellent projects, its focus was on the results of that hard work—the knowledge, understanding, and joy that comes through serious intellectual engagement.

As we celebrate the 20th annual conference, it is hard to imagine Wellesley without the Ruhlman Conference. It is built into our calendar and our consciousness. Students look forward to their participation in a Ruhlman panel or poster session. Deans describe the conference to candidates for faculty positions as one of the great selling points of the institution. Other colleges planning student research conferences look enviously at the structure we have built. Part of the joy of the day is the way in which presenters and attendees interact with the presenters and with one another in new ways. And part of the joy comes from Barbara Ruhlman’s obvious delight in her creation. The gratitude that flows back and forth between her and the students adds to the special nature of the day and is a manifestation of the connections among generations of Wellesley alumnae. It is not difficult to see why the Ruhlman Conference has become such a valued Wellesley tradition.

Lee Cuba is Professor of Sociology and former Dean of the College. While Associate Dean, he worked with Barbara Ruhlman to develop the plan for the Ruhlman Conference and chaired the program committee from 1997–1999. Adele Wolfson is the Neubach Schoen ’54 and Howard B. Schoen Professor in the Physical and Natural Sciences. She was Associate Dean of the College from 2004–2010 and chaired the program committee.

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As we celebrate the 20th annual conference, it is hard to imagine Wellesley without the Ruhlman Conference. It is built into our calendar and our consciousness. Students look forward to their presentations as they plan their research projects. Faculty mark the years by remembering which students participated in a Ruhlman panel or poster session. Deans describe the conference to candidates for faculty positions as one of the great selling points of the institution. Other colleges planning student research conferences look enviously at the structure we have built. Part of the joy of the day is the way in which traditional divisions are broken down. Science talks happen in Pendleton, poetry readings in the Science Center. Panels are created that cross disciplines and make new connections; their audiences are filled with staff, faculty, and students interacting with the presenters and with one another in new ways. And part of the joy comes from Barbara Ruhlman’s obvious delight in her creation. The gratitude that flows back and forth between her and the students adds to the special nature of the day and is a manifestation of the connections among generations of Wellesley alumnae. It is not difficult to see why the Ruhlman Conference has become such a valued Wellesley tradition.

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### Conference at a Glance

#### Themes

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:30–10:40am</td>
<td>Moment of Pause: Perceiving the Unseen (Exhibition) SCI-276</td>
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<td></td>
<td>Humanities and Subjectivity (Short Talks) SCI-276</td>
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<td></td>
<td>Politics, Economics, and Religion (Short Talk) SCI-399</td>
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<td></td>
<td>Culture, Experience, and Practice (Short Talk) SCI-277</td>
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<td>Establishing a Voice: Attempts to be Heard (Short Talk) SCI-277</td>
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<td>Music to My Ears (Short Talk) JAC-604</td>
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<tr>
<td>11:00am–12:10pm</td>
<td>Turning a New Leaf: An Introduction to Book Structures (Interactive Teaching Presentations) SCI-308</td>
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<td>Social Sciences</td>
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<td></td>
<td>What Makes Each Mind and Brain Unique (Short Talks) GRH-130</td>
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<td></td>
<td>Building Families (Short Talk) SCI-256</td>
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<td></td>
<td>Thinking and Rethinking Economics (Short Talks) SCI-392</td>
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<td>CRB: Procambarus clarkii: The Relationship between the Innate Immune System and Adult Metapleurae in the Crayfish, Procambarus clarkii (Panel Discussion) SCI-276</td>
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<td>Toward Environmental Justice: An Interdisciplinary Community-Based Approach to Address Urban Soil Lead (Panel Discussion) SCI-196</td>
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<td>Twenty Years of Ruhlman Under the Loop of Data Science (Panel Discussion) SCI-276</td>
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<td>Emissions at Wellesley College, 1990-2015 (Panel Discussion) SCI-276</td>
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<td>Economic Analyses of Education, Health Care, and Voting Behavior (Panel Discussion) SCI-196</td>
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<tr>
<td>1:30–2:40pm</td>
<td>Exploration of a Potent Novel Anticancer Agent and Its Molecular Mechanisms (Panel Discussion) SCI-276</td>
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<td>NanoScience: Cancer, Drugs and Other Innovations (Panel Discussion) SCI-276</td>
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<td>Characterizing Structures and Functions of Human-Derived Anticancer Peptides via Experimental and Computational Methods (Panel Discussion) SCI-276</td>
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<td>Molecular Matching: Using Computational Techniques to Study and Design Perfect Protein Matchers (Panel Discussion) SCI-276</td>
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<tr>
<td>3:00–4:10pm</td>
<td>What Makes Each Mind and Brain Unique (Short Talks) SCI-276</td>
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<td>Small Organisms (Short Talk) SCI-399</td>
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<td>Building Families (Short Talk) SCI-256</td>
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<tr>
<td>4:30–5:40pm</td>
<td>Our Stories: World Digital Storytelling: An Cultural Anthropology (Panel Discussion) SCI-276</td>
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<td>Meteor Maps Research Imperatives I (Panel Discussion) SCI-276</td>
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<td>Developing a Sense of Place: Designing an Effective Place (Panel Discussion) SCI-276</td>
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<td>Our Stories: World Digital Storytelling: An Cultural Anthropology (Panel Discussion) SCI-276</td>
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</tbody>
</table>

#### Lunch*

- Women and Power in the Middle Ages: Breaking the Medieval Stereotype (Panel Discussion) SCI-393
- Community-Based Approach to Address Urban Soil Lead (Panel Discussion) SCI-277
- Behind the Curtain: Performance Art (Panel Discussion) SCI-277
- Children of Apostasy: Reflecting on Years of Discrimination through Lullabies (Performance) JAC-604
- The Ruhlman Explore (computer application) ALH-Ballroom

#### Key

- FND—Founders Hall
- GHN—Green Hall
- JAC—Jewett Arts Center
- PNE—Pendleton East
- PNW—Pendleton West
- SCI—Science Center

* All members of the Wellesley College community are invited to enjoy lunch on the Wang Campus Center lawn. In the event of inclement weather, the lunch will remain in the same outdoor service location with the Campus Center and Alumnae Hall as indoor service locations. Light late afternoon entertainment is provided by the Blue Notes, the Tapels, and the Wellesley Winders, in the vicinity of the lunch tent.

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**Conference at a Glance**

**Themes**

- **Humanities**
  - Moment of Pause: Perceiving the Unseen (Exhibition) SCI-276
  - Humanities and Subjectivity (Short Talks) SCI-276
  - Politics, Economics, and Religion (Short Talk) SCI-399
  - Culture, Experience, and Practice (Short Talk) SCI-277
  - Establishing a Voice: Attempts to Be Heard (Short Talk) SCI-277
  - Music to My Ears (Short Talk) JAC-604

- **Science and Technology**
  - Singing in the Brain: Neural Correlates of Learning and Memory in Songbirds (Panel Discussion) SCI-276
  - BioPark for New Frontiers: An Interactive Museum Exhibit for Synthetic Biology (On-Location Presentation) SCI-104
  - Small Organism (Short Talk) SCI-399
  - Building Families (Short Talk) SCI-256
  - What Makes Each Mind and Brain Unique (Short Talks) SCI-276

- **Social Sciences**
  - Diving into the Past: A Holocaust Education and Service Trip to Poland (Panel Discussion) SCI-277
  - genocide Access to Formal and Informal Health Care in Massachusetts (Panel Discussion) SCI-276
  - Thinking and Rethinking Economics (Short Talks) SCI-276
  - Building Families (Short Talk) SCI-256
  - What Makes Each Mind and Brain Unique (Short Talk) SCI-276

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<tbody>
<tr>
<td>8:30–9:30am</td>
<td>Continental Breakfast served in Pendleton Atrium and Science Center Sage Lounge.</td>
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<tr>
<td>9:30–10:40am</td>
<td>Humanities</td>
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<td>Moment of Pause: Perceiving the Unseen (Exhibition)</td>
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<tr>
<td></td>
<td>Jaehyun Jennie Kim ’16, Art Studio/Economics</td>
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<td>Environment in Literature (Panel Discussion)</td>
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<td>Anna C. Everett ’16, English</td>
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<td>How Does Your Garden Grow: Nature and Ecology in Paradise Lost</td>
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<td>Ting Shan Lee ’16, English/Economics</td>
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<td>Cows and Churches: Exploring Rural New Mexican Identity Through Fiction</td>
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<td>Chloe M. Williamson ’16, English and Creative Writing</td>
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<td>Memory, History, and Subjectivity (Short Talks Group)</td>
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<td>Lucy J. Andrel ’16, English and Creative Writing</td>
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<td>Yesterday Is Here: A Poetic Exploration of Interpretation, Inheritance, and Memory</td>
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<td>Claire S. Verbeck ’16, English and Creative Writing</td>
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<td>William Faulkner’s Presence in the Latin American Boom</td>
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<td>Mariposa Rodriguez Pflug ’16, English/Economics</td>
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<td>Woof and Faulkner: Truth Through Human-Object Relationships</td>
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<td>Genevieve E. Rogers ’16, French/Economics</td>
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<td>Politics, Economics, and Religion (Short Talks)</td>
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<td>Uncovering the Business History of Communist China (1949-1978)</td>
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<td>Zhouzi Wu ’16, Economics/History</td>
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<td>Nagarajan as “City of Prayer”: From the Jesuit Mission In 1549 to the Atomic Bomb in August 1945</td>
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<td>Anandma G. Rupale ’16, Undelivered</td>
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<td>Nehruvian India: The Use of Economic Planning to Rapidly Industrialize an Agricultural Economy</td>
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<td>Zainab V. Parvaz ’17, International Relation-Economics</td>
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<td>Decolonizing the African City: Realizing Visions of an Authentically Postcolonial African City</td>
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<td>Pelamum O. Bitt ’16, International Relations-History</td>
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<td>Culture, Experience, and Practice (Short Talks)</td>
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<td>How to Live to Be 100: What Traditional Chinese Medicine Can Teach Us About Living a Happier, Healthier Life</td>
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<td>Caitlin P. Bailey ’16, East Asian Studies, Ana Isabelle M. van de Walle ’17, Economics/Chinese Language and Culture</td>
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<td>Cinema all’italiana: Working for the Journal of Italian Cinema and Media Studies</td>
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<td>Gabrielle J. Van Tassel ’16, English and Creative Writing, Alessandra Salado ’16, Political Science/French Cultural Studies</td>
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<td>Science and Technology</td>
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<td>Sula P. Ploehn ’16, Neuroscience, Hindus K. Chaudhuri ’16, Biochemistry, Bi K. Maeda ’16, Neuroscience, Leslie T. Elachibey ’16, Neuroscience</td>
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<td>BasPack for New Frontiers: An Interactive Museum Exhibit for Synthetic Biology (On-Location Presentation)</td>
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<td>Rachel S. Heun ’17, Cognitive and Linguistic Sciences, Venit Chen ’18, Computer Science, Semanae (Sami) Y. Minshawa ’17, Computer Science</td>
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<td>Small Organisms, Big Impact (Short Talks)</td>
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<td>Initial Colonizers of the Plastisphere, a New Marine Ecosystem</td>
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<td>Helena I. McManus ’16, Biological Sciences</td>
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<td>Evaluating the Localization of Sd2p/Mob1p During Cytokinesis</td>
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<td>Lois M. Reiner ’16, Biological Sciences</td>
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<td>Hybridization: Understanding the Invasive Impact of an Introduced Species on Endemic Species in the Galápagos Archipelago</td>
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<td>Sarah J. Tanguy ’16, Biological Sciences</td>
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<td>Observing the Microbial Community Dynamics of a Permafrost Thaw Ecosystem</td>
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<td>Amelia R. McClain ’16, Biological Sciences</td>
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A Bug’s Life (Short Talks)  
FND-128

Exploring the Role of the Hedgehog Signaling Pathway in the Tobacco Hornworm, Manduca sexta  
Serisudat (Suri) Apsorn ‘18, Undeclared

The Role of Vvl in Size Regulation in the Tobacco Hornworm, Manduca sexta  
Victoria R. Wang ‘16, Biological Sciences

Two Paths Diverge: Exploring the Threshold Weight in Manduca sexta  
Zhou Wang ‘16, Biological Sciences

Transcriptional Regulation of Ecdysteroid Biosynthesis Is Conserved Between Hemimetabolous and Holometabolous Insects  
Priyti F. Sarwar ‘16, Biochemistry

Applying the Liberal Arts to Critical Health Problems (Short Talks)  
PNE-139

Synergistic Drug Combinations Targeting Leukemia  
Emily S. Lee ‘16, Biochemistry

Problems Framing the Situation: Exploring the Relationship Between Nongovernmental Organizations and Donors in African HIV/AIDS Work  
Marguerite C. Mitchell ‘16, Anthropology

Incidentally Identified Pediatric Pituitary Microadenomas: To Treat or Not to Treat? That Is the Question  
Adriane E. Lage ‘16, Spanish

Air Pollution in Singapore: A Personalized Approach to Health  
Meredith L. McCormack-Mager ‘16, Mathematics

Bio and Chem (Short Talks)  
SCI-E111

Studying Drug-Receptor Interactions: Photolabeling Studies Related to Type II Diabetes  
Erin C. Yang ‘16, Chemistry

Impacts of a High-Fat Diet on the Growth of Intestinal Stem Cells and Cellular Models  
Cynthia F. Jung ‘17, Mathematics

Alternative Methods of Reductive Amination in the Synthesis of TD632 Analogs in Order to Study Receptors Involved in Type II Diabetes  
Emma K. Ambrogi ‘16, Chemistry

Investigating Blastaema-Specific Factors in Limb Regeneration in the Flour Beetle, Tribolium castaneum  
Ruth Sink ‘16, Biological Sciences

Social Sciences

What Do You Mean You Invented a Language? (Panel Discussion)  
FND-225


Perspectives From the Freedom Project I: Education for the 21st Century (Panel Discussion)  
FND-225

Dmitriaque Huang ‘19, Undeclared; Emma W. Lucie ‘19, Undeclared; Nicole (Nikki) C. Rodrigues ‘19, Undeclared

Thinking and Rethinking Economics (Short Talks)  
SCI-396

No Guns Me, No Guns You: Strategic Moves in Inglorious Basterds  
Kate M. Lefevre ‘16, Economics; Shruti Sitaram ‘16, Economics

Thinking Outside the Box: Evaluating the Efficacy of Ban the Box in Reducing Post-Prison Employment Barriers  
Amy N. Wickett ‘16, Economics

Solidarity Economy Responses to Sex Trafficking  
Mireille-Gloria (Gloria) Samen ‘18, Economics

The Role of Radical Economics Within the Palestinian Boycott, Divestment, and Sanctions (BDS) Movement  
Lydia (Hana) D. Han ‘18, Economics

Building Families (Short Talks)  
SCI-256

Tick-Tock Goes the Biological Clock: Wellesley College Seniors’ Attitudes Toward Egg Freezing  
Sabrina S. Zanza ‘16, Women’s and Gender Studies

The Mother’s Dream—A Love Story for My People  
Se-young Moon ‘16, Women’s and Gender Studies

Why Do People Border Cross? Conceiving Children Through Gametes and Their Importance in Families  
Jamie Yang ‘17, Mathematics

Making Babies: Reproductive Biomedicine, Gray Markets, and the Internet  
Jacqueline Elise ‘16, Women’s and Gender Studies

What Makes Each Mind and Brain Unique (Short Talks)  
GRH-130

No Effect of Driving Experience on Individuals’ Navigation Ability: Evidence from New Wellesley Navigation Test  
Zeren (Sabrina) Cheng ‘16, Psychology/Economics

Microexpression Decoding Ability Is Present in Untrained Participants: Above-Chance Performance Seen on Novel Task  
Blair K. Daniel ‘16, Neuroscience; Sara Rama ‘16, Neuroscience

Trustworthiness, Where Are You? Novel Test of Individual Differences in Where People Look to Gauge Trustworthiness  
Miynjung (Julia) Kim ‘16, Psychology; Courtney A. Lang ‘16, Neuroscience

You-Min (Evelyn) Lee ‘16, Neuroscience

Continental breakfast served in Pendleton Atrium and Science Center Focus.

Turning a New Leaf: An Introduction to Book Structures  
JAC-AUD

Intuitive Teaching Presentation  
Clipp Book Arts

Where the Visual Meets the Sonic (Panel Discussion)  
JAC-AUD

Stephanie F. Villafane ‘17, Chemistry; Jacqueline Elise ‘16, Women’s and Gender Studies
That Time of the Month: A Crowdsourced Zine on Menstruation and Identity (Exhibition)  
Hanna G. Day-Tenerowicz '16, Women and Gender Studies

Milano and Its Neighbors (Panel Discussion)  
Xiaorong (Sharon) Liu '17, Mathematics/Art History; Virginia G. White '17, Classical Civilization; Ningyi Xi ’17, Art History

Media and Marginalization (Short Talks)  
Écrire l’occupation: Representations of the Enemy in Three Works by Irène Némirovsky  
Chandler M. Abshire '16, French

From Mammy to Rudy: Representations of Black Women in Mass Media  
Gabrielle S. Chapman ’17, Economics

Resistance, Culture, and Community (Short Talks)  
¡En voz alta!: Resistance in the Cuban Nueva Trova  
Michelle A. Berrey DS, Latin American Studies

African Presence at Wellesley College  
Cindy E. Coffin ’16, Architecture

A Continual Evolution: The Reform of France’s “Politique de la Ville” as an Urban Peace-Building Mechanism in the Suburbs of Paris  
Pauline O. Day ’16, Individual-Peace and Justice Studies

Art Through the Ages (Short Talks)  
Ladies in the Bath: Nude Portraiture in the French Renaissance  
Sophie A. Kerwin ’16, Art History/English

Beyond the Loom: Examining the Relationship Among Gender, Textiles, and Architecture at the Bauhaus  
Orli C. Hakanoglu ’16, Architecture

Science and Technology

Sparking Mathematical Excitement Through Games and Puzzles (Interactive Teaching Presentation)  
Lyubov Kapko ’18, Mathematics; Paige N. Cheatham ’18, Undeclared

Building New Structures With Old DNA (Short Talks)  
Analyzing the Nature of DNA G-Quadruplex Formation In the Bdellovibrio bacteriovorus Genome  
Hikari Murayama ’16, Individual-Chemical Physics; Sally P. Shepardson-Fungairiño ’16, Chemistry

Transportation and Signal Propagation  
A Study of Longevity in Caenorhabditis elegans Glutamate Transporter Mutants  
Ashley E. Park ’16, Neuroscience

Characterizing the Adhesive Properties of Cytokine Receptor IL17Ra During Brain Development  
Heidi W. Biochemistry

Investigating the Interaction Between the Cardiac Potassium Channels hERG and KvLQT1  
Hedi W. Biochemistry

Other Sessions

Social Sciences

Digging into the Past: A Holocaust Education and Service Trip to Poland (Panel Discussion)  
Cecilia F. Nowell ’16, Comparative Literature/Political Science; Chelsea L. Reinos ’19, Undeclared; Reem Telenhoga '16, Economics; Aarava N. Garg ’16, Anthropology; Apurva Anotra ’16, Economics

Ecuadorian Access to Formal and Informal Health Care in Massachusetts (Panel Discussion)  
Nina Y. McCree ’16, Political Science; Ana K. Martinez ’17, Economics; Israel N. Lock ’17, Women and Gender Studies; Charlotte E. Kaufman ’18, Individual-Peace and Justice Studies; Sama S. Cherv ’18, Anthropology; Alondra Navarro ’18, Undeclared

Perspectives From the Freedom Project II: Race, Place, and Opportunity—  
Futosama Tak ’18, Biochemistry/Spanish; Vipasana Karkee ’19, Undeclared; Emily N. Moe ’19, Undeclared

Model Behavior: Economic Models of Household and Firm Behavior (Panel Discussion)  
Herl M. Allman ’16, Economics; Liang Zhang ’16, Economics/Mathematics; Hsi (Sabrina) Li ’16, Economics/ Mathematical; Wing Yan (Sharon) Shiao ’16, Economics/Mathematics

Calderwood Seminars in Public Writing: Engaging Interviews (Panel Discussion)  
Hero M. Ashman ’16, Economics; Liang Zhang ’16, Economics/Mathematics; Hui (Sabrina) Li ’16, Economics/Mathematics; Wing Yan (Sharon) Shiao ’16, Economics/Mathematics

A Study of Longevity in Caenorhabditis elegans Glutamate Transporter Mutants  
Mariya C. Patwa ’16, Chemistry

Grappling With Traumatic Memories: How Sites of Memory Engage in the Process of Humanization  
Isabelle L. St. Clair ’17, Individual-Peace Studies

Want a Nudge With That?: The Ethics of Using Libertarian Paternalism for Obesity Prevention  
Sophia H. Gibert ’16, Philosophy/Individual-Biology and Society

Other Sessions

Science and Technology

Intervention and Prevention (Short Talks)  
Not Just a Nurse: Peace Work in Jerusalem’s Hadassah Ein Kerem Hospital  
Jordan R. Hannink ’16, Women and Gender Studies

Developing a Depression Intervention for Women With Obstetric Fistula in Gondar, Ethiopia  
Marta C. Patwa ’16, Chemistry

Grappling With Traumatic Memories: How Sites of Memory Engage in the Process of Humanization  
Isabelle L. St. Clair ’17, Individual-Peace Studies

Want a Nudge With That?: The Ethics of Using Libertarian Paternalism for Obesity Prevention  
Sophia H. Gibert ’16, Philosophy/Individual-Biology and Society
12:10–1:30pm
Lunch

1:30–2:40pm
Humanities

From Research to Reform: The Role of Action Research in Educational Change  
PNE-127  
(Panel Discussion)
Michelle S. Chung ’16, Psychology; Meridian A. Witt ’16, Media Arts and Sciences; Dorcas V. Thompson ’17, Women’s and Gender Studies; Morgan L. Millon ’17, Political Science

Women and Power in the Middle Ages: Breaking the Medieval Stereotype (Panel Discussion)  
SCI-392
Matilda of Tuscany and the Investiture Controversy
Naomi L. Whitney-Hirschmann ’19, Undeclared
Matilda of England and the First English Civil War
Seraphina E. Oney ’16, History
Women and the Transmission of Texts in Medieval Europe
Brianna S. Renta ’16, English/Medieval and Renaissance Studies
Community: An Artistic Exploration of Wellesley’s Community Through Yik Yak (Exhibition)  
SCI-264
Abigail M. Jones ’16, Art Studio/Mathematics
A New Look with An Artful Eye  
SCI-256
Old Meets New, East Meets West: Jin Yunpeng’s Lettered Scrolls in the Davis Museum (Exhibition)  
Ningyi Xi ’17, Art History
The Secret Sculptor: An Everyday Object in New Light
Shweta Patwardhan ’16, International Relations-Political Science
Performances and Constructions of Gender (Short Talks)  
PNE-339
Subverting the Silence: Surrealism, Sexuality, and Queer Self-Fashioning in the Poetry of Federico Garcia Lorca
Laura B. Mayron ’16, English/Spanish
Consuming Hello Kitty: Saccharide Cuteness in Japanese Society
Kimberly H. Coombs DS, Japanese Language and Culture
Border Crossings: Women and Migration in the Works of Miguel de Cervantes
Charlotte J. Weiss ’16, Spanish
"Sexless Beings": Approaches and Responses to Women’s Medical Education in 19th-Century America
Aparna N. Anwar ’16, History
Past and Present: Classical Cultures, Contemporary Issues (Short Talks)  
PNE-127
Is Love Translatable?: Discussing the Translatability of Culturally Specific Ideas in Literature Through a Cognitive Literary Studies Perspective
Xuem (Emily) Jin ’17, Comparative Literature
An Instant Classic: Temporality, Immortality, and Mediation in Horace’s Exegi monumentum
Emily A. Mullin ’16, Classics

Sacred Time and Secular Power: Bells in the Soundscape of Medieval Arthurian Literature  
GRH-130  
Exploration of a Potent Novel Anticancer Agent and Its Molecular Mechanism (Panel Discussion)  
Milica Markovic ’17, Biochemistry; Elisa J. Wang ’18, Undeclared; Yin Y. Wang DS, Biochemistry; Evaona E. Goodman ’17, Biological Sciences; Jennifer C. Chang ’17, Biochemistry; Marika K. Aywa ’17, Biochemistry; Rouquai Zhou ’17, Mathematics/Chemistry
The Relationship Between the Innate Immune System and Adult Neurogenesis (Panel Discussion)  
GRH-330
Zoe K. Chatila ’16, Neuroscience; Megan E. McNeil ’17, Neuroscience; Annabelne Dugan ’18, Undeclared; Kase M. Baxton ’17, Neuroscience
Toward Environmental Justice: An Interdisciplinary, Community-Based Approach to Address Urban Soil Lead (Panel Discussion)  
PNE-139
Rosalie M. Sharp ’16, Environmental Studies; Meredith J. Wade ’17, Environmental Studies; Abiwe Vuparo ’16, Environmental Studies

Cracking the Code: Computers and You (Short Talks)  
FND-126
Tutor-Complete: An Educational Game and Intelligent Tutoring System for Languages and Automata
Katherine A. Aywa ’16, Computer Science
Observing and Designing Experiences of Collaborative Learning in Computer Science
Natalie R. Sapiel ’18, Computer Science
GenomiX: A Novel Interaction Tool for Self-Exploration of Personal Genomic Data
Christina S. Palladis ’16, Political Science; Lilianna N. Westby ’18, Cognitive and Linguistic Sciences
Profiling Locking Patterns in Multithreaded Programs
Kasey Shen ’17, Computer Science

A Fundamental Perspective: Math and Physical Chemistry Describe the World (Short Talk)  
SCI-278
A Mathematician’s View of Scheduling
Simona Samudreanu (Simona) Bopadjhiyeva ’16, Computer Science/Chemistry
Generalizations of Nil Clean Elements and Rings
Alex T. Black German ’16, Mathematics
Planes, Drones, and Helium Balloons: Developing Instruments and Probes for Terrestrial Exploration
Roan K. Gibson ’16, Astrophysics

Economic Analyses of Education, Health Care, and Voting Behavior (Panel Discussion)  
SCI-104
Jacqueline Lu ’16, Economics; Taylor J. Crater ’16, Economics; Evelyn E. Taylor-McGanger ’16, Economics; Suzanne K. Barth ’16, Economics/Sociology
Perspectives From the Freedom Project III: Urban School Choice—FND-225  
Inequity by ZIP Code (Panel Discussion)  
Elizabeth (Ellie) M. Doughterry ’18, Political Science; Mehak K. Sanog ’18, Physics; Karen Su ’19, Undeclared
Understanding Each Other and Ourselves: Research at Wellesley College (Short Talks)  FND-317

Body Image, Dating Application Usage, and Risky Sexual Behavior
Carolyn Arnold '16, Psychology; Teo Opfermann '16, Psychology/Spanish; Meryl Rosenburg '16, Psychology

Examining the Effect of Language Brokering on College Students
Candela Zheng '17, Psychology; Reinon Kim '16, Psychology; Jennifer Guaman '16, Psychology

The Imposter Phenomenon and Nonacademic College Life
Sophie Donatue '16, Psychology; Ryno Huerta '16, Psychology; Mashuki Kora '16, Psychology

Language Expression in Song, Writings, and Speech (Short Talks)  SCI-274

Love and Power in Lyrics: The Gender Differences in Songs by Male and Female Artists Across Genres and Generations
Jeanie Galle '16, Cogntive and Linguistic Science

The Mystery of Japan’s Disappearing Brazilian Population
Hidenori Gotoh Calhuy '17, Japan Language and Culture

An Investigation into the Europeanization of the Written Chinese Vernacular
Katherine J. Hs '16, Cogntive and Linguistic Science

Foreign Accent Classification
Emily Ahn '16, Cognitive and Linguistic Science

Global Issues From Resources to Warfare (Short Talks)  PNE-239

Implementation and Effects of India’s School-Based Iron Supplementation Program
Hannah K. Raiborn '16, Economics

Redefining the Role of Female Ex-Guerillas in Colombia’s Demobilization and Reintegration Process
Sukriti Rupnarayan Alvarns '16, International Relations-Political Science

Just War, Motivations, and Legitimacy: The Case of Military Intervention in Syria
Baha Cabah '16, Philosophy/Political Science

Impact Assessment on Insulation in Northern Pakistan
Natalia D. Castan '16, Economics

3:00–4:10pm Humanities

Defining Korean Identity Abroad and at Home (Panel Discussion)  SCI-278
Amanda O. Trebil '16, Russian Area Studies; Nicole (Nikki) C. Rodriguez '19, Undeclared; Masan Mochsok '18, Economics; Amanda L. Kusler '17, Undeclared

Cold War Poetics: Defiance in the Margins (Panel Discussion)  SCI-277
Jessica Wu '18, Undeclared; Grace Y. Park '16, Political Science; Se-yung Mott '16, Women's and Gender Studies; Hyunyoung (Ashley) A. Kim '19, Undeclared; Se Jin K. '19, Undeclared; Emily Chen '17, History; Ayu Boi '19, Undeclared; Kayly Shen '17, Computer Science

Behind the Curtain: Process to Performance (Panel Discussion)  JAC-450
Natalia J. Solomon '16, Cinema and Media Studies/Theatre Studies; Elizabeth A. Yancey '16, Theatre Studies; Ariela S. Nazar-Rosen '16, English; Jessica M. Forden '17, Economics/Theatre Studies

Children of Apartheid: Reflecting on Years of Discrimination Through Lullabies (Performance)
Cathleen McGovern '76, Music

2:40–3:00pm Break

Refreshments served in Pendleton Atrium and Science Center Focus.

3:00–4:10pm Science and Technology

Global Issues: Nanotechnology (Panel Discussion)  SCI-396
Anael W. Ochoua '17, Biochemistry; Olivia K. Gada '17, Biochemistry; Kathleen K. Chen '17, Sociology/Chemistry

MuSme (Panel Discussion)  SCI-104
Anah Itufani '16, Undeclared; Priscilla A. Lu '18, Computer Science; Eilen Cho '16, Neuroscience

Geochemistry of the Built Environment (Panel Discussion)  SCI-377
Caron L. Gallagher '17, Individual-Environmental Chemistry; Emma Van Sooy DS '15, Undeclared; Rosalia M. Sharp '16, Environmental Studies; Hannah D. Danielson '16, Economics/Environmental Studies; Amanda B. Hernandez '18, Environmental Studies; Hayley N. Jewett '16, Environmental Studies; Hannah Ortego '17, Geosciences; Alexis Ceranove '18, Biological Sciences; Nienna Alista '18, Environmental Studies; Kimberly Chea Van Man '19, Undeclared; Meredith Wade '17, Environmental Studies/History; Edelina Vazquez '16, Environmental Studies

Twenty Years of Ruhlman Under the Loop of Data Science (Panel Discussion)  FND-126
Hannah Murphy '19, Undeclared; Meredith McCormack-Mager '16, Mathematics; Kate Kennedy '18, Computer Science; Whitney Fahnholl '17, Media Arts and Science/Chinese Language and Culture; Claire Somerson '18, Biological Sciences; Mary Ruth Nye '17, Computer Science; Alice Mizuazawa '16, Undeclared; Jacqueline L. Hsu '18, Computer Science; Anne Schwartz '18, Computer Science; Nina Marie-Annand '18, Computer Science

Bodies in Motion (Short Talks)  GRH-330

Finding the Invisible Needle: How Directional Dark Matter Detectors Help Us Burn the Haystack
Caroline S. Marion '18, Undeclared

From Quantum Materials to Pendulums: Finding the Intersection Between High-Level Research and Introductory Physics
Carolyn S. Marion '18, Undeclared

Butterflies, Zigzags, and Photons: Bioinspired Light Confinement
Emma C. Regan '16, Physics

Second Harmonic Generation Imaging of a Magnetic Topological Insulator
Carina A. Belesu '16, Physics/Mathematics

Thoughts About Thoughts: Computations of the Brain (Short Talks)  GRH-130

Striosomal Interactions: Experiments on Behavior and the Brain
Julia E. Jey '18, Undeclared

Theory of Mind and Learning Models: Unraveling How We Think About Others’ Thoughts
Isabelle A. Rosebank '16, Neuroscience

Relating Conditional Probability
Xuemin Zheng '16, Philosophy/Mathematics

Social Sciences

“Just First, Let Me Take a Selfie”: Analyzing the Role Social Media Plays in the “Selfie Generation” (Panel Discussion)
Mariana Hernandez '19, Undeclared; Olivia M. Soreb '19, Undeclared; Michelle Au Lee (Michelle) Ye '19, Undeclared; Darlina Harun '19, Undeclared; Gabriela Steffen '19, Priscilla A. Lee '18, Computer Science; Edelina Vazquez '16, Environmental Studies

Perspectives From the Freedom Project IV: Rethinking Criminalization of Prostitution (Panel Discussion)  FND-225
Holly N. Rishe '18, Economics; Margaret O. Flynn Sapia '19, Undeclared

Environmental Studies

Identification and Classification of Environmental Studies (Panel Discussion)  SCI-378
Amal Tidjani '18, Undeclared; Priscilla A. Lu '18, Computer Science; Eileen Cho '16, Neuroscience

Geochemistry of the Built Environment (Panel Discussion)  SCI-377
Caron L. Gallagher '17, Individual-Environmental Chemistry; Emma Van Sooy DS '15, Undeclared; Rosalia M. Sharp '16, Environmental Studies; Hannah D. Danielson '16, Economics/Environmental Studies; Amanda B. Hernandez '18, Environmental Studies; Hayley N. Jewett '16, Environmental Studies; Hannah Ortego '17, Geosciences; Alexis Ceranove '18, Biological Sciences; Nienna Alista '18, Environmental Studies; Kimberly Chea Van Man '19, Undeclared; Meredith Wade '17, Environmental Studies/History; Edelina Vazquez '16, Environmental Studies

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Hannah Murphy '19, Undeclared; Meredith McCormack-Mager '16, Mathematics; Kate Kennedy '18, Computer Science; Whitney Fahnholl '17, Media Arts and Science/Chinese Language and Culture; Claire Somerson '18, Biological Sciences; Mary Ruth Nye '17, Computer Science; Alice Mizuazawa '16, Undeclared; Jacqueline L. Hsu '18, Computer Science; Anne Schwartz '18, Computer Science; Nina Marie-Annand '18, Computer Science

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Perspectives From the Freedom Project IV: Rethinking Criminalization of Prostitution (Panel Discussion)  FND-225
Holly N. Rishe '18, Economics; Margaret O. Flynn Sapia '19, Undeclared
4:10–4:30pm Break
4:30–5:40pm

Multicultural Explorations in Israel (Panel Discussion) SCI-392
Ariel Y. Cohen ’16, Undeclared; Sabrina A. Ruiz ’18, International Relations-Political Science; Marissa R. Mansur ’16, Environmental Studies

Mellon Mays Research Imperatives I (Panel Discussion) SCI-274
Exploring Cape Malay Identity Through the Lens of Food
Allyson E. Ang ’17, Sociology
La lotería de la vida: A Family Ethnography
Cassandra Flores-Montano ’16, Women’s and Gender Studies
A Shared Experience
Grace Park ’16, American Studies/Political Science
Reflecting on Roots: Exploring the Salience of African-American Ethnicity in an Increasingly Diverse Black America
Tamar Davis ’16, Sociology
Self-Love in Aristotle’s Alcmeonae Ethics and Eudemon Ethics
Claudia Yen ’16, Philosophy
Real and Imagined Relationships (Short Talks) PNE-127
Queen and King of the Playground: Understanding Gender Roles in a Preschool Classroom
Andrea P. Aguilar ’16, Political Science
Integration of Syrian Refugees in Jordan
Delia M. Arias De Leon ’16, Political Science
When Heads Roll: Assessing the Effectiveness of Mexico’s Decapitation Strategy
Marilis (Mari) E. Dugas ’16, Political Science/Russian Area Studies
The Social Dimensions of War: Factors of Operational Success for Russia’s Military
Mawli (Masi) E. Dugan ’16, Political Science/Russian Area Studies
What Fuels Political Violence?: Analyzing the Effects of Natural Resources on Insurgency Warfare
Alice (Alidy) Y. Liang ’16, Economics/Political Science
How Our Irritable Selves Read the Emotions of Others
Alexandra (Ali) L. Boyle ’16, Psychology
Remembering the Imaginary: Memory for Imagined Relationships and the Connection Between Fantasy Orientation and Social Ability in Adolescents
Grace E. Bennett Pierre ’16, Psychology
Imaginary Companions: Complexity and Relationship Type
Hea Jung Lee ’16, Psychology
Integration, Reintegration, Disintegration (Short Talks) FND-317
The Effects of Pollen Stress During Larval Development on the Nursing Behavior of Adult Honeybees
Corena M. Loeb ’16, Biological Sciences
Testing the Caldera Origin of the Blue Hills: U-Pb Geochronology of the Hancock Porphyry, Milton, MA
Nisreen S. Abo-Sido ’18, Environmental Studies; Ciaran L. Gallagher ’17, Individual-Environmental Chemistry

Science and Technology
Characterizing Structures and Functions of Histone-Derived Antimicrobial Peptides via Experimental and Computational Methods (Panel Discussion)
Amy Yuan ’16, Chemistry; Lei Wei ’16, Biochemistry; Sabin (Hannah) Sun ’16, Individual-Chemical Physics; Carla P. Perez ’18, Chemistry; Sung Hyun (Sarah) Lee ’16, Chemistry; Dania M. Figuera ’17, Biochemistry
Molecular Matching: Using Computational Techniques to Study and Design Perfect Protein Matches (Panel Discussion)
Fido G. Nyagwo ’16, Chemistry; Nasir Jahan ’16, Chemistry; Diane Chen ’17, Chemistry; Yuan Cui ’17, Chemistry/Mathematics
Vision and Art: Independent Interdisciplinary Investigations of the Human Visual System (Panel Discussion)
Nancy A. Zhang ’16, Mathematics; Ali N. Johnson ’16, Neuroscience; Janis N. Kellen ’16, Neuroscience; Hope C. Fuller-Boxer ’16, Neuroscience; Amanda B. Faith ’16, Neuroscience; Sydney M. Cada ’16, Neuroscience
Science in the Great Outdoors (Short Talks) SCI-277
Evaluation of the Potential of Alkaline Battery Oxide Powders to Reduce Lead Mobility in Urban Agricultural Settings
Noreen S. Allen-Side ’18, Environmental Studies; Cianne L. Gallagher ’17, Individual-Environmental Chemistry
The Effects of Pollen Stress During Larval Development on the Nursing Behavior of Adult Honeybees (Apis mellifera)
Carena L. Leech ’16, Biological Sciences
The Influence of Predatory Chemical Cues on the Foraging Behavior of Hognia Lenta Wolf Spiders
Ellie Patterson ’16, Biological Sciences

Social Sciences
Alyssa N. Brody ’16, Political Science/Environmental Studies; Charlotte H. Bertokh ’16, Environmental Studies; Julie R. Ong ’16, Environmental Studies; Samantha L. Brown ’16, Environmental Studies; Carter E. Brown ’16, Biological Sciences/Environmental Studies; Sepeh C. Diaz De Villegas ’16, Biological Sciences/Environmental Studies; Somer M. Hamala ’17, Environmental Studies; Vrisonie Tappakwanokho D5, Environmental Studies; Lush-M. Niyeng ’16, Environmental Studies/Anthropology; Rebecca A. Maitzen ’16, Environmental Studies/English; Ria Mary Henningsen ’16, Environmental Studies; Meiya N. Jowett ’16, Environmental Studies
Our Storied World: Digital Storytelling as Cultural Anthropology (Panel Discussion) SCI-396
Kavinjda Thennakon ’19, Undeclared; Maryam Chia Pervaz ’19, Undeclared; Fatime S. Adam ’19, Undeclared; Vivian D. Zhang ’19, Undeclared; Tina Ahmad Humma Al-Zaib ’19, Undeclared; Malak Alsayyad ’19, Undeclared; Blake Cohen ’19, Undeclared; Chloey Garza ’19, Undeclared; Hema Venkata ’19, Undeclared

The Selfie in American Life (Panel Discussion) SCI-278
Helen M. Anderson ’19, Undeclared; Daniela Kremerman ’19, Undeclared; Margaret (Margaret Anne) A. Collins ’19, Undeclared; Se Yeon Cho ’19, Undeclared; Diana Cruz ’19, Undeclared

Shakespeare Society: Twelfth Night and Much Ado About Nothing (Short Performance) JAC-450
Katherine (Kari) M. Bauer ’16, Theatre Studies/English; Bowen S. Winterwood ’16, Cognitive and Linguistic Science/Theatre Studies

Year Zero: A Visual Narrative of the Cambodian Genocide (Exhibition) SCI-256
Julia S. Uni ’16, Economics
Stratified Elevations (Exhibition) SCI-264

16 WELLESLEY COLLEGE RUHLMAN CONFERENCE 2016
Creating a New Vision: Reimagining Healthy Relationships Among LGBTQIAP+ Communities of Color and Complicating Narratives of Domestic Violence
Gabriela Arenas ’17, Women’s and Gender Studies

Exploring Mental Health Perspectives Among Black and African-American College Students
Christiana Joseph ’16, Anthropology

Radicalizing Community Colleges
Christina Phelps ’17, Sociology

Teacher Activism: Addressing Inequalities in the Classroom
Huiying Chan ’16, Individual-Ethnic Studies and Education Studies

Perspectives From the Freedom Project V: Censorship in International Perspective
Xueying Chen ’16, Economics/English; Chuqi (Cassandra) Zheng ’18, Mathematics; Caroline Bechtel ’17, Political Science

Formal and Informal Education (Short Talks)

Bones Don’t Lie: Use of Archival and Forensic Perspectives to Understand the Origins of the Wellesley College Human Skeletal Anatomy Teaching Collection
Isabel (Izzy) M. Starr ’16, Anthropology

Modernizing High School Mathematics: How 3D Printing and Modeling Technology Can Enhance Student Learning
Sophia N. Zupanc ’19, Undeclared

Seed Kit: Creating a Lab-in-a-Box to Address Gendered Science Education Inequities in the Developing World
Caleb E. Bercu ’16, Women’s and Gender Studies

Public Education, Civic Engagement, and the Latine Vote
Risa C. Marquez ’16, Psychology, Alejandro Casas Mendoza ’16, Economics/Latin American Studies, Andrea P. Aguilar ’16, Political Science

We’re Only Human (Short Talks)

Interpersonal Identity and Behavioral Motivations in Monozygotic and Dizygotic Twins
India H. Kerle ’16, Psychology

Leadership Camps: Effective Ways to Enact Long-Term Change?
Celeste A. Globb ’16, Psychology, India H. Kerle ’16, Psychology

Shyness, Love-Shyness, and Individual Differences in Sexual Attitudes and Behavior
Alyson B. Randall ’16, Psychology

Mind-Wandering Tendencies in Younger Adults
Anissa S. Sridhar ’16, Neuroscience, Hannah W. Cretzfeldt ’17, Neuroscience

Jacqueline Loewe Fowler ’47 Prize in Public Speaking

This year’s Ruhlman Conference will host the Maurer Public Speaking Program’s second annual Jacqueline Loewe Fowler ’47 Prize in Public Speaking competition. The prize honors Mrs. Fowler’s support of public speaking at Wellesley through her substantial contributions to the public speaking program established by Anne E. Maurer ’51 and her husband Gilbert in 2012.

The four finalists, listed below, will be presenting throughout the day in PNE-239, and their talks can be viewed online at www.wellesley.edu/live.

Finalists (in Schedule Order)

9:30–10:40 am
Zainab Younus ’17
International Relations-Economics
Advisors: Nikhil Rao, History
"Nehruvian India: The Use of Economic Planning to Rapidly Industrialize an Agricultural Economy"

1:30–2:40 pm
Saviri Restrepo Alvares ’16
International Relations-Political Science
Advisors: Christopher Candland, Political Science
"Redefining the Role of Female Ex-Guerillas in Colombia’s Demobilization and Reintegration Process"

4:30–5:40 pm
Isabel M. Starr ’16
Anthropology
Advisors: Adam Van Arsdale, Anthropology
"Bones Don’t Lie: Use of Archival and Forensic Perspectives to Understand the Origins of the Wellesley College Human Skeletal Anatomy Teaching Collection"

4:30–5:40 pm
Sophia N. Zupanc ’19
Undeclared
Advisors: Kenneth Hawes, Education
"Modernizing High School Mathematics: How 3D Printing and Modeling Technology Can Enhance Student Learning"
Frequent Sources of Support for Student/Faculty Research

Brachman Hoffman Fund
Elizabeth Davis Cook Student Research Fund
Pamela Daniels ’59 Fellowship
Educational Research and Development Committee
Virginia Fiske Fund
Howard Hughes Medical Institute
IBM Research Fund
Amabel Boyce James Fund for Summer Research in the Sciences
Keck Northeast Astronomy Consortium Grant
Sara Langer Fund for Research in Geosciences
John and Elizabeth Alden Little Science Fund
Janina A. Longtime Fund for Summer Research in the Natural Sciences
Massachusetts Space Grant Consortium Grant
Georgeanne Miller Mulhern Fund for Student/Research in the Sciences
National Buchet Fellowship
National Institutes of Health
National Science Foundation
Office of the Provost and Dean of the College
Barbara Peterson Ruhlman
Jerome A. Schiff Fellowships
Joan and Herbert Schilder Student Research and Travel Fund
Staley Fund for Cancer-Related Research
Robert and Karl Staley Fund
Fund for Summer Research in the Social Sciences

Conference Planner

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Please note that people will be leaving or entering the rooms between or even during presentations.
Moment of Pause: Perceiving Shakespeare and Melville

We pass by, walk through, and inhabit spaces changes the viewer's perception and enhances the dialogue between spaces changes the viewer's perception and enhances the dialogue between spaces. The transformative process of observing, experiencing, and recording in my visual journal. The spaces I observed, experienced, and recorded in my visual journal. The transformative process of observing, experiencing, and recording in my visual journal. The transformative process of observing, experiencing, and recording in my visual journal.

Cows and Churches: Exploring Rural New Mexican Identities Through Fiction

In my thesis, I have explored the role of whales in literature from Greek mythology to early English and American literature, including Shakespeare’s Paracelsus, Lyly’s Gallatillina, and Melville’s Moby-Dick. Whales are a powerful metaphor for politics on land, sexual prolation, tyranny, and godliness. Dolphins have a unique connotation as being friendly toward humans, going as far back as the myths of Poseidon, the dolphins’ back, and in Hini’s Natural History. I my particular attention to queer readings of these texts as well as to the role that gender plays in these texts. Highlight illustrating of early English conceptions of whales as scaly sea monsters, and Lyly’s Gallatillina, a 1592 play in which two fair maidens cross-dress as men in order to avoid being eaten by a sea monster and fall in love with each other, on the believing that the other is a man. Carcass metaphors and queer love ensue.

Memory, History, and Subjectivity (Short Talks Group FND-120)

I was awarded the Schall Fellowship in order to pursue research for my creative writing. I will discuss the process of returning to my mother’s home—the island of Martinique—to conduct oral histories with three different generations of women in my family. I will talk about the cultural differences I encountered in the Caribbean challenging, the process of practicing Creole, and how transcending Creole to French to English informed the way in which I wrote my thesis. I will also talk about the general culture of the island itself, including a brief history of its colonization and what attracted me—first a first-generation American—to return.

Yesterday is Here: A Poetic Exploration of Inheritance, Memory, and Family Writing

A presentation of my thesis work studying how Virginia Woolf and William Faulkner communicate the inner minds of their characters through the relationships characters form with the objects and animals they encounter. Key text studied include To the Lighthouse, “The Beautiful Lamb,” and “City of Prayer,” in contrast to Hiroshima, which is remembered today as the “City of Anger,” was a descendent of the “Clandestine Christians” of the 16th century. The business history of Communist China is an imperative part of this study that gets attention from scholars. My senior thesis in history offers a new perspective on China’s transformation from a planned economy in the 1950s to its market reforms in the 1980s. Specifically, it explores the emergence of business structures and strategies at the enterprise level including some of the challenges that China faced as a developing socialist country. It begins with the development of small, self-sufficient enterprises during the Great Leap Forward, often associated with the so-called “backward steel furnace” movement. From the 1970s to the 1990s, new forms of business enterprises emerged in China. The growth of this sector, and the evolution of industrialization under colonial rule. India’s first prime minister, Jawaharlal Nehru, looked toward the Soviet Union as well as to the United States as a model for their new industrialization. Nehru’s efforts led to widespread economic thinkers as he led efforts to industrialize the country through five-year plans. In my paper, I argue that India’s efforts in this field of history can lead to both these success and failure in order to assess if planning was the best way for India to rapidly industrialize its agricultural economy.

Decolonizing the African City: Realizing Visions of an Authentically Postcolonial African City

Contrary to popular understanding, African cities were often sites of terror, inequality, and racial segregation where those colonized were made disenfranchised. Thus, what became of these former colonial African cities that were designed to promote European superiority? How did African leaders and urban planners overcome the challenges inherited from colonialism? Finally, how did the ideologies of African postcolonial leaders influence urban plans? Through the case studies of Tanzania’s capital Dodoma and Nigeria’s capital Abuja, I will evaluate the methods and policies adopted by postcolonial governments to overcome the harmful colonial legacies and consequently decolonize the African urban space.

Cattle Ranching: Exploring Rural New Mexican Identities Through Fiction

How Does Your Garden Grow: Nature and Ecology in Paradise Lost

The relationship between humans and their environment. Milton’s Eden raises questions about the role of active work in utopia, the tension between wilderness and the need for order, and expressions of desire in a garden setting. My work draws on ecosophy by examining the prevailing environmental issues of the 17th century and the growing awareness about the negative impact of human activities on the Earth. In addition, I consider other literary visions of gardens offered by Shakespeare, Spenser, and Milton that helped shape the character of Milton’s garden. Lastly, I will speak about my tour of Renaissance-style gardens in England and how visiting gardens that Milton would have known and walked through in his lifetime has impacted my work.

Subjectivity (Short Talks Group FNC-239)

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To share with Wellesley the inner workings of a prestigious journal and see that our hard work is largely unknown. When completed, my translation of Exequias como lasú (1932, Swordes Like Lips) will be the first attempt to bring the book to English-speaking readers. Today, I will share some of my experiences in the world of translation and tell stories of my time traveling through Andalucía and Madrid in search of scholars, all with the hopes of convincing you that translation is not mere desk work but, rather, a wild adventure.

Music to My Ears (Short Talks)

Old-Time: Toe-Tapping Dance Music and Race in the Music Industry

Fiona M. Boyd '16, French/Music

Advisee: Karonne M. Ammons, Music

With its up-tempo ironic humor, insistent rhythms, and penetrating vocals, old-time music is one of America’s most lively and aptly describing musical genres. A genre of social dance music originating in the American South that blends African and European influences, old-time music has captivated musicologists who seek to understand the genre’s development. A specialized system of unconnected brain regions is thought to store the neural representation of song memory and is involved in producing the song the bird has learned. In the Gobes lab, we use functional magnetic resonance imaging (fMRI), electron microscopy, and microtechniques to investigate the regional, cellular, and molecular underpinnings of song learning.

Singing in the Brain: Neural Correlates of Learning and Memory in Songbirds (Panel Discussion)

SCI-270

Stella P. Perreault '16, Neuroscience; Homoena G. Khedha, Biochemistry; Rie K. Maeda, Biochemistry

Human speech is an exceptionally complex skill, developed through a process involving both auditory and vocal experience. Although speech is fundamental to our everyday lives, remarkably little is known about how the brain circuits associated with speech processing and production develop. Songbirds provide a unique model system for investigating these questions. Humans and songbirds share analogous brain structures and share behavioral and developmental similarities in the acquisition of vocalizations. Young male zebra finches, like human infants, acquire their vocalizations through a process of imitation and trial-and-error learning. A specialized system of unconnected brain regions is thought to store the neural representation of song memory and is involved in producing the song the bird has learned. In the Gobes lab, we use functional magnetic resonance imaging (fMRI), electron microscopy, and microtechniques to investigate the regional, cellular, and molecular underpinnings of song learning.

BacPack for New Frontiers: An Interactive Museum Exhibit for Synthetic Biology (On-Location Presentation)

SCI-104

Rachel S. Kuem '17, Cognitive and Linguistic Sciences; Samuel Alex, Computer Science; Sannaala (San) Y. Mincheva '17, Computer Science

Advisee: Orit Shiye, Computer Science

The Wellesley College Human Computer Interaction (HCI) Lab collaborated with Silicon Valley’s Tech Museum of Innovation to create an interactive museum exhibit that teaches fundamental synthetic biology concepts. As part of the HCI Lab, we designed the digital component that will complement the on-site experience of the exhibit to convey basic principles of synthetic biology and raise awareness of the excitement and complexity of the field. The premise of the exhibit is that museum visitors will take on the role of a scientist and engineer but will lack the scientific knowledge to explore scientific missions in extreme environments, including Mars, Antarctica, and the deep sea. Museum visitors will also engage with tangible representations of DNA in order to engineer helpful bacteria. As part of our research,
we went through several stages of the user-centered design process and prototyped our exhibit at the Tech Museum.

Small Organisms, Big Impact (Short Talks)

PNE-339

Initial Colonizers of the Plastisphere, a New Marine Ecosystem

Helena I. McMonagle ’16, Biological Sciences

The negative impacts that plastics have on organisms such as marine mammals, sea turtles, seabirds, and fish that ingest plastic and become entangled in plastic are well documented. Less is known, however, about the potential for plastics to influence the communities of microorganisms that attach to this artificial substrate. Raising organisms that become attached to plastics comprise a new community of life in the marine environment, known as the Plastisphere. These organisms include invasive species, potential pathogens, and microbes that are able to metabolize hydrocarbons. Our results revealed that early colonizers of the Plastisphere include a variety of bacteria (e.g., Vibrio, Marinobacter, Hydromonas) that form biofilms and metabolize hydrocarbons. We also found that some of the early colonizers (e.g., Pseudomonas, Polaribacter, Thalassobaca) are present in much later stages of succession in the Plastisphere. This study offers the first glimpse of the early microbial colonizers of the Plastisphere in coastal and open ocean ecosystems.

Evaluating the Localization of Sid2p: Moblp Kinase complexes

Luo M. Xiong ’16, Biological Sciences

Interphase nodules are collections of signaling proteins that are localized in regulated cell division. These nodes function to recruit protein kinases to the center of the cell that signal the onset of the mitotic phase by regulating cytokinesis. Using Schizosaccharomyces pombe, or fission yeast, as a model organism, recent research has revealed two interphase node proteins, Blp1p and Ge2p, to be individually implicated in recruiting the Sid2p/Moblp kinase complex to initiate ring constriction. Using time-lapse imaging, additional effects of the deletion of Blp1p and Ge2p still remain unclear. My thesis therefore aims to observe whether or not the deletion of both proteins will result in an additive or redundant effect. Establishment of a "molecular clock" will enable us to directly compare the timing of the formation and constriction of the contractile ring across strains, and additional quantitative analysis will further reveal criterion levels of early bud constriction. Using protein kinases to the center of the Interphase nodes are collections of signaling components led to altered imaginal cell proliferation and Hh signaling. Further studies are underway to elucidate the relationship between JH and Hh signaling.

The Role of Vvl in Size Regulation in the Tobacco Hornworm, Manduca sexta

Yuichiro Suzuki, Biological Sciences

The sesquiterpenoid lipid hormone called juvenile hormone (JH) plays a critical role in insect development, but very little is known about its interactions with patterning genes. In the tobacco hornworm, Manduca sexta, proliferative actions associated with metamorphosis are preceded by a decline in the levels of JH. This project tested the hypothesis that the proliferation of imaginal cells, which are stem cell-like, is controlled by the interaction between JH and the Hedgehog (Hh) signaling pathway. In situ hybridization was used to localize Vvl expression in early larval stages. Vvl expression was analyzed in starved animals. Further gene knockdown of Hh signaling in vitro. In vivo gene knockdown of Hh signaling components led to altered imaginal cell proliferation and Hh signaling. Further studies are underway to elucidate the relationship between JH and Hh signaling.

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between T-0632 and GLP-1R may provide release, its short half-life makes GLP-1
Although injection of GLP-1 leads to insulin
II Diabetes
the effectiveness of this personalized data
a more localized picture of pollution
by individuals. Participants were given
primarily background pollution data—to
Traffic emissions is the top cause of air
in children with an incidentally identified
or hormonal testing may be appropriate
follow-up without aggressive radiological
we suggest that an incidentally identified
or radiological changes over the duration of
we studied germline mutations in colon
and mouse ISCs have indicated that this diet
on the growth of cancerous intestinal stem
and tissues in the appropriate dimensions
microenvironment have previously been
Cellular Models
Growth of Intestinal Stem Cells and
photoaffinity labeling studies of the receptor
order to study the binding site of GLP-1R,
T-0632 is a small-molecule inverse agonist
of the pancreatic receptor GLP-1R. In
order to map their binding pockets in
biological receptors.
Impacts of a High-Fat Diet on the Growth of Intestinal Stem Cells and
Cytotoxic Tumor cells. Our findings are a step toward future
In this study, we sought to identify blastema-
specific factors in the flour beetle, Tribolium
tissue engineering with a smooth surface
and size. In organisms that can regenerate
limbs, a key step in regeneration is the
de-differentiation of cells to form a blastema.
In this paper, we examine the effectiveness of
this gene is upregulated during
A GFP enhancer trap line indicated that the
decreased duration of blastema maintenance.
Thus, the blastema maintenance phase. Thus, the
expression of this gene is upregulated during
a potential blastema factor. Findings show
specific factors in the flour beetle,
and tissues in the appropriate dimensions
and size. In organisms that can regenerate
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Social Sciences
What Do You Mean You Invented a Language? (Panel Discussion)

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Thinking and Rethinking Economics (Short Talks)

Thinking and Rethinking Economics (Short Talks)

Perspectives From the Freedom Project I: Education for the 21st Century (Panel Discussion)
FNDF-225
Dominique Huang ’19, Undergraduate; Emma Lurie ’19, Undergraduate; Nicole Nikle ’18, Undergraduate; Thomas Cushman, Sociology; Joshua McCabe, Sociology
The Freedom Project is dedicated to exploring the concepts of freedom and liberty in all their manifestations. Education is an important institution that facilitates these essential conversations and discussions. During the 2015 Wintersemester, we were inspired by Professor Boris Omran Wirth who places the focus on the role of education in contemporary society and current innovations in integrating technology into the modern-day classroom. Despite an exponential increase in the rate of technological innovation, modern education looks almost the same as it did a century ago. Where does the modern technology we do business, conduct government, and interact with friends, has had limited effect on the next generation of leaders. This panel examines American school systems and the integration of technology and suggests possibilities for harnessing technology in order to help students of all backgrounds maximize their full potential as free and equal citizens.

Thinking and Rethinking Economics (Short Talks)

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No Guns Me, No Guns You: Strategic Moves in Inglorious Basterds
Kate M. Lyttle ’16, Economics; Shrini Sastri ’16, Economics
ADVISOR: Susan Skarch, Economics
Directed by Quentin Tarantino, the 2009
film Inglorious Basterds follows the fictional escapades of a band of Jewish-American
soldiers during World War II. Its cinematic
merits aside, the movie is a veritable treasure
trove of game theoretic concepts at work.
We analyze one notable scene that culminates in a standoff between a German soldier and an
American officer with this in mind. Together with
the class, we will explore the implications of
game theoretic analysis to explain how
strategic moves, credibility, and information asymmetry can help us predict the eventual
outcome of the standoff and perhaps even
the fictional war itself.

Thinking Outside the Box: Evaluating the Efficacy of Ban the Box in Reducing Post-Prison Employment Barriers
Amy N. Wickett ’16, Economics
ADVISOR: Philip Levine, Economics
My economics senior thesis examines the
efficacy of Ban the Box, a policy that prohibits employers from asking about criminal history on initial job applications. This campaign aims to diminish employment barriers for those
with criminal convictions by allowing them
to be considered on the basis of their other
merits before having to disclose a criminal
despite the intentions of this
policy, it may lead to increased labor market
discrimination, yielding negative unintended
consequences. I will present my findings on
the labor market and incarceration effects of
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Prior to and after conception, how do the individuals’ reasons and politics behind gamete donations and surrogate practices differ by gender and citizenship? What are the power of body and imagination in play are an act of truth telling, exploring the meaning of genes varies by country. In conclusion, border crossing may not be as simple as it seems. While the respondents who border crossed place a lot of importance on genes, many of them are against expanding reproductive liberty and are against disclosing genetic information to their children. Additional conclusions are yet to be determined.

Making Babies: Reproductive Biomedicine, Gray Markets, and the Internet
Jacqueline Ellis ’16, Women’s and Gender Studies advisor; Rosana Hertz, Women and Gender Studies

Reproductive biomedicine is a rapidly expanding field whose increasing commodification and institutionalization have led to the establishment of numerous semi- or unregulated markets facilitated by networked and communication technologies. Using the kidney market as a reference point, I examine the kinship bonds formed between participants in reproductive biomedicine gray markets, as well as the gendered, racialized, and classed dimensions of the biotechnology industrial complex. Finally, building off previous feminist scholarship of global care chains, I map our transnational reproductive biomedicine trails and discuss their implications in a rapidly globalizing world.

What Makes Each Mind and Brain Unique (Short Talks)
GRH-130

No Effect of Driving Experience on Individuals’ Navigation Ability: Evidence from New Wellesley Navigation Test
Ziru (Sabrina) Cheng ’16, Psychology/Economics advisor; Jeremy Wilmer, Psychology

Despite the fact that navigation abilities have been studied extensively, the cases of individual differences in navigation ability have not yet been systematically studied due to a lack of web-based test paradigms capable of testing sufficiently large samples of individuals. In this study, we develop a novel, web-based navigation test, the Wellesley Navigation Test (WNT). We then test 218 participants via Amazon’s Mechanical Turk to investigate the potential impact of individuals, driving experiences on their navigation abilities, as well as the interaction effect of gender and navigation strategies on navigation abilities. We did not find any significant correlation between driving experience or driving skill and individuals, navigation ability. However, the research shows that individuals who use cardinal direction to navigate tend to perform better in the WNT than those who use other navigation strategies.

Microexpression Decoding Ability Is Present in Untrained Participants: Above-Chance Performance Seen on Novel Task
Matt R. Daniel ’16, Neuroscience; Sana Rama ’16, Neuroscience advisor; Jeremy Wilmer, Psychology

Microexpression decoding is a poorly understood type of facial expression, into which very little research has been performed (Frank and Svetina, 2015; Wang et al., 2015). Past research has shown, although microexpression decoding ability can be trained, without training, microexpression decoding ability is above chance levels in the general population (Matsumoto and Hwang, 2011). As part of our Research Methods class, we created the Microexpression Decoding Test (MDT). We will discuss the use of stimuli taken from the CASME II, and the class utilization of both microexpression coding and reading. Using Amazon Mechanical Turk participants. We found the MDT to be highly reliable, and to correlate with macroexpression decoding, as measured by the RMET. We also found that performance on the MDT ranged up to three times above chance, and take control of their fertility future. Despite the procedure’s growing popularity, there remains a dearth of information about egg freezing, and no studies have been conducted on potential and prospective egg freezers. In this presentation, I discuss the results of my survey of Wellesley college seniors about their attitudes toward egg freezing and whether or not they are related to a future/family strategy. How will you contextualize my findings and theorize about their implications for women who are mothers, professionals, and both.

The Mother’s Dream—A Love Story for My People
Se-yong Matt ’16, Women’s and Gender Studies advisor; Rosana Hertz, Women and Gender Studies

Working on the ground to challenge oppressive structures is important. But what is just as important are the histories we tell each other and tell ourselves. For mothers, professionals, and both.

“During the first session in the library about the history of Wellesley, I was fascinated by the presentation, which was excellent . . .”
—Barbara Peterton Ruhlman ’54
The invisibility of menstruation in the mass media representation of Black Women, and the current struggle for new, more compelling representations of the Black woman’s psyche through her artistic expression. For decades, mass media has presented the Black woman’s psyche through her predominantly black female tropes, which constructs socially acceptable images of Germans, as well as of French elites and women, to show that rather than producing unproblematic works, Némovics employs these external and internal enemies to French national solidarity in order to consider timeless ethical questions regarding individual responsibility and collective identity.

Milano and Its Neighbors (Panel Discussion) FND-126

Karen Lange, Mathematics

For four months, the parallel between the Suburbs of Paris and the Outskirts of Germany, as well as of French elites and women, and those of Germans, as well as of French elites and women, to show that rather than producing unproblematic works, Némovics employs these external and internal enemies to French national solidarity in order to consider timeless ethical questions regarding individual responsibility and collective identity.

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Dependent and multi-input/multi-output control of gene expression in E. coli. Further research into how this system can be expanded for use in mammalian cells and for recording information in the gut of M. musculus, a process that will enable more in-depth recording of environmental conditions in vivo and allow for programming complex gene expression.

Analyzing the Nature of DNA G-Quadruplex Formation in the Bacteriophage bacteriophage Genome

Hakeem A. Musa-Manye ’16, Indravi Indian; Chemical Physics; Saffi P. Sheppard-Fangueira ’16, Chemistry

ADVISOR: Megan Nance, Chemistry

Deoxyribonucleic acid is often thought to be in its double helical form, where the bases are interacting via Watson-Crick hydrogen bonding. However, there is a trend for strands with an abundance of guanines to form G-quadruplexes via Hoogsteen hydrogen bonding. These structures have the power to inhibit telomerase activity, replication, and transcription. The Nance lab has been exploring the formation of these folded structures in the Bacteriophage bacteriophage genome, using parameters such as temperature, time, salt, and crowding agents, and using a series of assays analyzed by such techniques as UV-VIS spectroscopy, CD spectrometry, and quadruplex-specific porphyrin fluorescence.

Transportation and Signal Propagation

ONE-339

A Study of Longevity in Caenorhabditis elegans

Glutamate Transporter Mutants

Hamel Y. Cana Ollivier ’16, Neuroscience

ADVISOR: Debra Norman, Neurobiology

Although some signaling systems regulating aging in Caenorhabditis elegans have been identified, the role of glutamate (Glu), the most prominent excitatory neurotransmitter in our brain, remains largely unknown. Dietary restriction has been demonstrated to extend the life of multiple species, including Caenorhabditis elegans. Recent studies have found a molecular pathway where a-ketoglutarate (a-KG), a Kreb’s cycle intermediate, prolongs the lifespan of Caenorhabditis elegans in dietary restriction. In this model, we observe two different sets of reactions that produce a-KG, but whether Glu transport affects longevity in Caenorhabditis elegans has not been investigated yet. An ongoing project in the Bauer lab explores the aging phenotype of Caenorhabditis elegans glutamate transporter mutants with respect to wild-type controls. We will understand whether a deficiency in Glu transport interfaces with lifespan.

Characterizing the Adhesive Properties of Cytoplasmic Receptor IL17Ra During Brain Development

Avery E. Park ’16, Neuroscience

ADVISOR: Adam Matthews, Biological Sciences

A recent study found that a Na+/Ca2+ exchanger was required for cell-surface expression of the plasma membrane receptor IL17Ra, which is important for the inflammatory response in the brain. This project will involve analyzing the adhesive properties of the cytoplasmic receptor IL17Ra to determine how this receptor may be involved in neuronal development. Understanding the role of IL17Ra could lead to more definitive diagnostic tools and preventative measures of ASD, both of which are critically lacking.

Investigating the Interaction Between the Cardiac Potassium Channels hERG and KvLQT1

Heidi Wade ’16, Biochemistry

ADVISOR: Victoria W. Bahn, Biological Sciences

The heart is regulated by the collective electrical activity of individual heart cells called cardiomyocytes. The electrical activity of cardiomyocytes is due to the influx of sodium and calcium ions into cardiomyocytes and the efflux of potassium ions out of cardiomyocytes. Aberrations in the flow of ions into and out of cardiomyocytes can underlie a variety of cardiac arrhythmias and diseases. While there is only a single sodium channel protein that is responsible for the influx of sodium ions into cardiomyocytes, there are more than five different potassium channel proteins that are responsible for the efflux of potassium from cardiomyocytes. Historically, it has been assumed that the exces of potassium currents were acting as a regulatory mechanism for the depolarizing potential. In this project, there was a block or a mutation in one potassium channel that rendered it to have reduced or non-functional, then the other potassium channels could compensate for this through increased activity. However, the idea that excess potassium channels are acting as a regulatory mechanism has been challenged by recent research showing that loss of function in one kind of potassium channel, hERG, resulted in the reduced activity of another potassium protein, KvLQT1, and vice versa. Subsequent studies showed that hERG and KvLQT1 physically interact within the cell cytoplasm, and that deletion of this interaction remains unknown. I am interested in further elucidating the nature of interaction between hERG and KvLQT1 using fluorescence methods to label hERG and KvLQT1 proteins. Specifically, I am addressing whether interchanging the fluorophores that hERG and KvLQT1 are tagged with will alter the fluorescence intensity of each protein. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins. In addition, I am examining whether the concentration of hERG (protein) to KvLQT1, the construct ratio, alters the FRET (fluorescence resonance energy transfer) between the two proteins.

Social Sciences

Digging Into the Past: A Holocaust Education and Service Trip to Poland (Panel Discussion)

Delanie N. Gurgur ’16, Anthropology; Ava E. Anna ’16, Economics

ADVISOR: Shoshana Goldstein, Wellesley College Hillard, Birdwright

This past November, six Wellesley students were a part of a group that traveled to Poland with Combines with the Philipines of Greater Boston and the Nonprofit From the Depths. The trip sought to bring attention to the relationship between Jews, Muslims, Christians, and the changing of the world. Students participated in educational tours focused around the Holocaus, performed service work involving rescuing Jewish graveston, visiting Auschwitz, and met a Holocaust survivor. As a part of the program, students engaged with various perspectives on the Holocaust—including Jews, non-Jews, Americans, international students, and Polish people. What is the role that the experience can be incorporated into the larger academic curriculum at Wellesley and why is it vitally important that we continue to educate ourselves and others on the history of genocides.

Perspectives From The Freedom Project II: Race, Place, and Opportunity—Implications for Freedom and Social Mobility (Panel Discussion)

FND-225

Fotowatube Bah ’18, Biochemistry/Spanish; Yiyananga Kanabo ’19, Underead, Emily N. Mao ’19, Underead

ADVISOR: Thomas Coleman, Sociology; John H. McCallo, Sociology

The Freedom Project Winteres program allowed Adam Smith Fellows to explore the role of freedom with respect to history, political, and economic issues. A free society requires a minimal level of opportunity that everyone has the liberty to chart their own life course. In this panel discussion, we will consider the confluence of race, place, and opportunity and their implications for social mobility within the United States and in comparative perspective. Karkee examines the emergence of social and economic order within the chaos of refugee camps. Bal explores the issue of mass incarceration and the disproportionate number of people of color in the American prison system. Most examines the consequences when high-income and predominantly white communities adopt more restrictive zoning regulations in metropolitan areas. How do these exclusionary land-use policies exacerbate racial segregation and act as barriers to social mobility?

Model Behavior: Economic Models of Household and Firm Behavior (Panel Discussion)

SCI-E211

Hero M. Ashman ’16, Economics; Liang Zhang ’16, Economics/Environmental Studies; Christina I. Phelps ’17, Sociology

ADVISOR: David Lindauer, Economics

Adelphi’s Model Behavior: Economic Models of Household and Firm Behavior program allowed students to engage with various perspectives on the Holocaust, performed service work involving rescuing Jewish graveston, visiting Auschwitz, and met a Holocaust survivor. As a part of the program, students engaged with various perspectives on the Holocaust—including Jews, non-Jews, Americans, international students, and Polish people. What is the role that the experience can be incorporated into the larger academic curriculum at Wellesley and why is it vitally important that we continue to educate ourselves and others on the history of genocides. The Freedom Project Winteres program allowed Adam Smith Fellows to explore the role of freedom with respect to history, political, and economic issues. A free society requires a minimal level of opportunity that everyone has the liberty to chart their own life course. In this panel discussion, we will consider the confluence of race, place, and opportunity and their implications for social mobility within the United States and in comparative perspective. Karkee examines the emergence of social and economic order within the chaos of refugee camps. Bal explores the issue of mass incarceration and the disproportionate number of people of color in the American prison system. Most examines the consequences when high-income and predominantly white communities adopt more restrictive zoning regulations in metropolitan areas. How do these exclusionary land-use policies exacerbate racial segregation and act as barriers to social mobility?
Boston College and directs the Arts and Mind Lab, which investigates cognition in the arts, to detect intentionality in abstract art, her work on gifted children, and the important benefits of arts education.

Cardinal Chelis: Larry Gilbertson, a molecular biologist, leads the Cambridge team of Monsanto, where he focuses on protein optimization, specifically, on improving insect-resistant genetically modified plants. Gilbertson and I discussed the day-to-day influences of his job (he led me through a tour of his lab, where he clones and edits genes) and also talked about more contemporary aspects of GMOs and about Monsanto as a company. He shared his views on food safety, GMO labeling, and patenting. Gilbertson believes firmly in the work that he does, and offers an interesting human perspective on the fourth-most hated company in the United States.

Christina Phelps: Homophobia in the African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. Questions such as why African-American community has long been a taboo topic. 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Women and Power in the Middle Ages: Breaking the Medieval Stereotype (Panel Discussion)

SCI-392

1:30 – 2:40pm

Valerie Ramseyer, History and Renaissance Studies

Matilda of Tuscany was an important political figure in 11th-century Italy, known in particular for her crucial role in the Investiture Controversy, in which popes and emperors fought over the question of who had the right to appoint and invest religious leaders in Latin Christendom. This research project investigates Matilda’s political and military role in the conflict, and seeks to determine the significance of her leadership.

Matilda of England and the First English Civil War

Souphina E. Drey 16, History

The House of Plantagenet was one of the longest-ruling dynasties of England. Spanning several centuries, the dynasty produced famous kings, a plethora of literary characters, and the Wars of the Roses, which famously ended in the founding of the House of Tudor. But prior to the Plantagenet dynasty, there was Empress Matilda. An engaging scholar and leader, she was the heir to the English throne through both the Norman and Anglo-Saxon bloodlines. Known by her title from her first marriage, Empress Matilda played a pivotal role in the first English Civil War. She fought against her cousin, Stephen of Blois, for her right to rule independently as England’s true monarch, transcended gender boundaries of the time, and ultimately, through her son, founded the Plantagenet dynasty.

Women and the Transmission of Texts in Medieval Europe

Brianna S. Renta 16, English/Medieval and Renaissance Studies

How do we transmit literature from one generation to the next? Through the medieval period, textual innovation and translation were the primary stepping stones for passing cultural, social, and intellectual aspects across time, space, and language. By engaging critically with modern forms of textual transmission in digital humanities in conjunction with medieval practices of textual transmission, this paper explores the specific ways in which women and other historically non-dominant groups have ensured the transfer of literature from the medieval period to today.

Community: An Artistic Exploration of Wellesley’s Community Through Yik Yak (Exhibition)

SCI-264

Abigail M. Jones 16, Art Studio/Mathematics Advisor, Phyllis McGuiren, Art

Students across Wellesley’s campus post on Yik Yak, a social media app that allows people to anonymously create and view discourses through threads within a first-name-only system. All users have the ability to contribute to the stream by writing, responding, and “voting up” or “voting down” (liking or disliking) yaks, and the feed refreshes every 12 hours. How does the lack of ownership and authorship of the posts affect Wellesley’s community? In response to this question, I created an installation last semester that turned these “Yaks” into printed matter and encouraged people to physically engage with them. In this presentation, we will discuss the process of creating the art and will discuss the themes of anonymity, originality, temporality, morality, and community that I explored through this installation.

A New Look with an Artful Eye

SCI-256

Old Meets New, East meets West: Jin Yungpeng’s Lettered Scrolls in the Davis Museum (Exhibition)

Ning Xi 17, Art History Advisor, Hope Liu, Art

Inaugural curator of the Davis Museum is a pair of lettered scrolls written in 1920 by Jin Yungpeng, the premier of the Republic of China, and given as a birthday present to Calem Stone, the namesake of Wellesley’s Stone Tower. A gift from a Chinese politician to an American businessman, this object not only embodies both tradition and innovation but it also is a token of China’s connection with the West in the early 20th century.

The Secret Sculptor: An Everyday Object in New Light

Shweta Patwardhan 16, International Relations

Political Science Advisor: Carlos Devira, Studio Art

I began my independent study in sculpture with the idea of taking everyday objects and altering them to somehow add an unexpected element while retaining their familiarity. I chose to incorporate light bulbs as the focus of my piece for their aesthetic qualities such as their smoothness and symmetry. I also chose to focus on light bulbs for their symbolic meaning. It is ironic that the incandescent light bulb, the quintessential symbol of technology and innovation, is itself becoming obsolete as it is replaced steadily by LED bulbs, fluorescent bulbs, and other forms of lighting.

Over the semester I explored new mold-making and casting techniques, as well as new materials, with each new opportunity and challenges. My finished piece is composed of plastic and plaster representations of glass light bulbs which are encased in clear plastic. Thus the work aims to not only "preserve" the light bulbs, but also to highlight the tension between technology, innovation, and the passage of time.

Performances and Constructions of Gender

(Short Talks)

PNE-309

Subverting the Silence: Surrealism, Sexuality, and Queer Self-Fashioning in the Poetry of Federico García Lorca

Laura B. Mayron 16, English/Spanish Advisor: Jill Stroman-Stark, Spanish

Spanish poet Federico García Lorca’s queer identity was denied until the 1970s, long after his untimely death in 1936, but since then, literary and queer theorists have read his poetry for clues to his identity and sexuality. This paper examines Lorca’s poetry under the lenses of both literary and queer theory, bringing together biographical information with the Fascistad plan of study of different authorial “selves.” Using what we know about the poet’s life and about the variety of poetic identities that Lorca created on the page, my presentation aims to give a bird’s eye view of how his surrealist and theatrical techniques create different “stages” and poetic selves through which he could perform queer identity.

Consuming Hello Kitty: Saccharine Cuteness in Japanese Society

Madeleine J. Smith 16, French/Medieval and Renaissance Studies Advisor: Emily A. Mullin, Classics

Kumiko H. Eda, ESL, Japanese Language and Culture Advisor: Erin Zannemar, East Asian Languages and Cultures

Cuteness is an aesthetic response between a viewer and an object. There is a spectrum of cuteness that allows viewers to feel a variety of emotions based on the objects they are interacting with. What is the power behind those objects that make the viewer develop feelings for them? Cute items in Japanese society are closely associated with the feminine and the vulnerable. The largest consumer of cute products in Japan is the shoji (young lady). The shoji uses cute objects to create an atmosphere around herself, allowing her to be empowered in the patriarchal society of Japan.

Border Crossings: Women and Migration in the Works of Miguel de Cervantes

Chien W. Yu ’16, Spanish Advisor: Jill Stroman-Stark, Spanish

In the past years, much has been written about Miguel Cervantes’ experience as a captive in Algiers. My thesis aims to explore a different academic interest in Africa—especially in the Maghreb as a hub of Mediterranean culture. I will focus on Cervantes’ time in captivity (1575-1580) to explore its impact on his life and literary work. For Cervantes, the experience might have been an artistic exploration of both personal and cultural identity throughout his life, his experience in the Maghreb represented his first real encounters with a different culture, and thus makes his claim to the immortality that comes along with “classical” status at once, rather than waiting for the judgment of history.

Is love translatable? The theory of conceptual metaphor, drawn from cognitive linguistics, proposes that metaphors are not simply formalistic techniques but conceptual categories that structure our understanding of the world. Due to the aid of conceptual metaphor, culturally specific definitions of love are encased in clear plastic. Thus the work aims to not only “preserve” the light bulbs, but also to highlight the tension between technology, innovation, and the passage of time.

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Is Love Translatable?: Discussing the Translatability of Culturally Specific Ideas in Literature Through a Cognitive Literary Studies Perspective

Xueni (Emily) Jin ’17, Comparative Literature Advisor: Robert E. Reman, French

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of Aristrian romance questioned secular authority and problematized the relationship between traditional Church and conceptions of knighthood. Furthermore, we will explore the ways in which medieval conceptions of knighthood confounded the author Chrétien de Troyes.

**The Relationship Between the Innate Immune System and Adult Neurogenesis in the Chickenfish, Procambarus clarkii (Panel Discussion)**

GRH-330

Zena E. Castilla ’16, Neuroscience; Megan E. McNeil ’17, Neuroscience; Aamirah Dziger ’18, Undeclared; Ken M. Banasa ’17, Neuroscience

Adult neurogenesis, the production of new neurons in the adult brain, is a lifelong process that occurs in vertebrate and invertebrate species. Although thought that mammalian neuronal stem cells self-renew, the neuronal precursors found in the chickenfish, Procambarus clarkii and Procambarus fallax lack this ability, and instead must be replenished by an enriched source. Recent studies have demonstrated that the immune system serves as a source of precursor cells. To enhance our understanding of the relationship between adult neurogenesis and the immune system, we are investigating the physiological and molecular interactions between these two systems. Our aims include (1) defining the physiological and molecular properties of immune-derived cells that integrate into the brain; (2) examining the influences of serotonin and dopamine, an immune system cytokine, on adult neurogenesis; and (3) studying the characteristics of cultured immune cells and determining how different agents can bias them toward a neuronal fate.

**Toward Environmental Justice: An Interdisciplinary, Comparative Approach to Address Urban Soil Lead (Panel Discussion)**

PNE-139

Booth M. Sharp ’16, Environmental Studies; Meredith J. Wade ’17, Environmental Studies; Makhani Vajpeyi ’16, Environmental Studies Advisors

This panel will discuss three projects in the natural and social sciences that are addressing soil lead contamination in low-income urban communities of color. Environmental justice organizations are working to address lead exposure in urban environments through policy, legal, and organizing strategies. Geochemical analyses of soils and composts inform understanding of lead exposure risk. Our results implicate soil line grazers as the primary cause of elevated blood lead and as a recontamination threat for clean areas. Understanding lead exposure and transport pathways informs sustainable remediation designs. Effectively communicating health risks and remediation strategies is an important, long-term collaboration with local residents. Partnerships with community organizations like the Food Fight project can provide unique challenges, but allow for more effective, ethical, and equitable research. Together, these projects examine the social and environmental implications of lead contamination to sustain our urban ecosystems.

**Cracking the Code: Computers and You (Short Talks)**

PND-120

Tutor-Complete: An Educational Game and Intelligent Tutoring System for Languages and Automata

Kaitlyn E. Gaber ’18, Psychology Advisor; Enia Mustafaraj, Computer Science

Educational games and intelligent tutoring systems have been shown to improve student learning outcomes by increasing engagement and providing individualized instruction. However, while introductory programming students frequently benefit from such systems, students in upper-level theoretical courses such as CS235 (Languages and Automata) have dense textbooks and dry mathematical readings as their primary or only resources. Tutor-Complete aims to fill this gap by presenting two fundamental individual’s well-being. Personal genomic data are also unique because, unlike other data, they cannot be anonymized. Therefore, genomic data are largely stable during a person’s lifetime; it is the interpretation and use thereof that can change. Furthermore, the rapid development of technology over time as new medical research explores relationships between genes and health.

Over the summer, we developed a tool for collecting and analyzing video recordings of problem-solving sessions collected in the form of video and audio recordings of problem-solving sessions between computer science students. By refining these models, we seek to identify and distill meaningful and effective learning experiences in computer science. In order to improve teaching standards of our curriculum, we analyze features of effective collaboration, from an understanding of the use of humor as a learning tool to the importance of peer communication and clarification of pertinent lecture content.

**GenomicX: A Novel Interaction Tool for Self-Exploration of Personal Genomic Data**

Christina S. Pellelo ’16, Political Science; Lilianna N. Westerl ’18, Cognitive and Linguistic Sciences Advisor; Orli Shacher, Computer Science

The increase in the availability of personal genomic data to lay consumers using online services poses a challenge to Human Computer Interaction (HCI) researchers. Such data are complex and sensitive, and can involve multiple dimensions of uncertainty, and can have substantial implications for an individual’s well-being. Personal genomic data are also unique because, unlike other data, they cannot be anonymized. Therefore, genomic data are largely stable during a person’s lifetime; it is the interpretation and use thereof that can change. Furthermore, the rapid development of technology over time as new medical research explores relationships between genes and health.

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**A Fundamental Perspective: Math and Physical Chemistry Describe the World**

A Mathematician’s View of Scheduling

Sina Stanescu (Simona) Burdugebaca ’17, Computer Science Advisor; Anne Tour, Mathematics Advisor

In elementary school, we learn that given any two nonequal integers, we can always find a third integer that is between the two. This is not always possible in the case of other objects. Consider the schedule of events happening at a conference; we can say that one activity must end before the other begins, but if they overlap in time, then the events are called “incompatible” with each other. This is consistent with this ordering form what is called a partial order. In fact, they form a special type of partial order, called an interval order. In this talk, we will discuss interval orders and the following. Which partial orders come from schedules? Which come from schedules in which all events start and end at the same time? Which come from schedules in which each event is a one or two hour long? Generalizations of Nil Clean Elements and Rings

Alexi T. Block Gorman ’16, Mathematics Advisor; Alexander Dierl, Mathematics

An object of special interest in the field of algebra is the ring, defined by a set of axioms that generalize certain characteristics of the integers. The definition of this function is called a direct sum under addition, substitution, and multiplication, but not necessarily division. Arguably the most important structure found within a ring is the additive identity, or the set of elements of the ring that is closed under addition within that subset, and closed under multiplication by any element in the ring as a whole. In 1933, the work of the Mathematics Department defined a property of elements of rings called “nil-clean,” and we will introduce a second property of rings called “generalized nil-clean.” We will discuss why this extension is a meaningful and establish both properties as generalizations of previous theorems concerning rings of special interest.
Perspectives From the Freedom Project III: Urban School Choice—Equity by ZIP Code (Panel Discussion)

FND-225
Elizabeth (Ellie) M. Dougerty ’18, Political Science; Mahak K. Sawant ’18, Physics; Karen Su ’19, Undeclared
ADVISORS: Thomas Cashman, Sociology; Jontue McCabe, Sociology

This presentation focuses on equity in the American educational system. For children in low-income communities, education plays a central role in escaping poverty. Nonetheless, many children grow up in neighborhoods with schools that cannot provide sufficient resources for them to succeed. Consequently, children across America are left unable to compete educationally in comparison to their middle- and upper-class socioeconomic peers.

How is it possible for students who grow up in disadvantaged communities to escape poverty and achieve social mobility when their playing fields are unequal from the start? In an effort to unravel the complexities of this issue, our presentations will focus on the public school system of Boston, a city in which families have the choice to send their children outside of their ZIP codes to better-performing schools. We analyze the various models of education that comprise the Boston system, such as public, magnet, charter, and private schools, and offer policy suggestions on how the system can be improved overall.

Understanding Each Other and Ourselves: Research at Wellesley College (Short Talks)

FND-317
Body Image, Dating Application Usage, and Risky Sexual Behavior
Sally Thomson
The present study assessed dating app usage among students and body image, adult attachment style, and risky sexual behavior. Participants were 181 females who completed assessments of body image, sexual risk, attachment style, and dating app usage. There was a positive correlation between dating app usage and risky sexual behavior, but this was not mediated by body esteem. Results showed that individuals with anxiety attachment had lower body image than those with secure attachment and that anxiety was more likely to use dating applications. There was a trend for those with a prescribed attachment style to be more sexually risky than individuals with fearful/avoidant attachment.

The Imposter Phenomenon and Nonacademic College Life
Sophie Donohue ’16, Psychology
The current study examined the relation between the impostor phenomenon (IP), a feeling of intellectual fraudulence associated with an inability to internalize success, and mental health outcomes, college adjustment, friendship satisfaction, co-rumination, and attachment style. The impostor phenomenon was positively related to stress, anxiety and stress levels, worse college adjustment, and anxious attachment style. These results indicate students who experience more impostor phenomenon feelings have more negative mental health outcomes and that anxiety is more likely to use dating applications. There was evidence that IP feelings are related to satisfaction and co-rumination in close friendships, the results of the current study indicate that students with more IP feelings exhibit more anxious attachment in their close relationships and experience worse social adjustment in college.

Language Expression in Song, Writings, and Speech (Short Talks)

FND-417
Love and Power in Lyrics: The Gender Differences in Songs by Male and Female Artists Across Generations
Irene Galler ’16, Cognitive and Linguistic Sciences
ADVISOR: Andrea Lentz, French
Research has shown that the lyrics we hear in popular music affect how we view our romantic relationships. My thesis investigates whether and how lyrics of female and male artists’ songs reflect, and experience greater role conflict, detrimentally affecting various levels of college adjustment. Compared to Caucasian-American peers, both Asian- and Latin-American students’ language brokers more frequently, but experiences of role conflict and college adjustment varied. The final paper will examine whether role conflict was a significant mediator for college adjustment, Asian-American language brokers were more likely to experience poorer adjustment in regards to their academic performance than the other groups. These results contribute to sparse literature following language brokers’ experiences in the college environment. Implications and limitations of this study are considered as well as ways in which future research can be inclusive of college language brokers.

The Mystery of Japan’s Disappearing Brazilian Population
Hiden Gordon Colly ’17, Japanese Language and Culture
ADVISOR: Yoh米 Marrone, East Asian Languages and Cultures

In 2008, Brazilians were Japan’s third-largest minority population, with over 300,000 Brazilians living in Japan. However, in the past seven years this number has decreased by over 50 percent, with 100,000 Brazilians leaving in 2019 alone. Yet despite being the largest emerging group of migrants, little research has been done in Brazil on the history and development of hemoglobin in the blood) is the most widespread nutritional deficiency in India—more than half of school-aged children are anemic, and the risk likely differs from a mild to severe iron deficiency. Children with insufficient iron stores demonstrate diminished cognitive and physical development, decreased academic achievement, and development of anemia. These critical individual effects, plus spillover effects at the community or country level, make iron deficiency one of the key public health concerns facing policy makers in India. In 2013, India’s federal government instituted the Integrated Child Development System (ICDS) to reduce the prevalence of childhood anemia by providing nutritional supplements in schools. I use school-level data to study the variation in implementation of the ICDS and then exploit that variation to examine the effect of the ICDS on children’s hemoglobin levels and other nutritional outcomes.

Redefining the Role of Female Ex-Guerrillas in Colombia’s Demobilization and Reintegration Process
Sara Rose Boitano ’16, International Relations-Political Science
ADVISOR: Christopher Candland, Political Science

In December 2015, supported by the Schiff Fellowship, I traveled to Colombia to interview demobilized female FARC guerrillas who are participating in state reintegration programs. Estimates suggest that 40 percent of the combatants in Colombia’s decades-long conflict are women.

Global Issues From Resources to Warfare (Short Talks)

FND-409
Implementation and Effects of India’s School-Based Iron Supplementation Program
Hannah Reubin ’16, Economics
ADVISOR: Gauri Shaw, Economics
Iron-deficiency anemia (a low concentration of hemoglobin in the blood) is the most widespread nutritional deficiency in India—more than half of school-aged children are anemic, and the risk likely differs from a mild to severe iron deficiency. Children with insufficient iron stores demonstrate diminished cognitive and physical development, decreased academic achievement, and development of anemia. These critical individual effects, plus spillover effects on the community or country level, make iron deficiency one of the key public health concerns facing policy makers in India. In 2013, India’s federal government instituted the Integrated Child Development System (ICDS) to reduce the prevalence of childhood anemia by providing nutritional supplements in schools. I use school-level data to study the variation in implementation of the ICDS and then exploit that variation to examine the effect of the ICDS on children’s hemoglobin levels and other nutritional outcomes.

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However, the complex role that women have played has largely been overlooked. Much of the literature cited in the historical context of women's roles in the industrial revolution is skewed in its focus on selling cheap, efficient, and sustainable goods. Throughout the semester, the discussion between women and their experiences in economic, environmental, and health impacts attributed to Gallup’s influence by utilizing quantitative and qualitative social science research.

**From all reports this year’s Rubhinam was the best! I’ve had bad classes from, alumnae, faculty, and others about how outstanding the girls work is and how excellently presented. It has been very heartwarming for me.**

—Barbara Peterson Rubhin ‘54

**Humanities**

**Defining Korean Identity Abroad and at Home (Panel Discussion)**

**SC1-278**

Amanda O. Tidjani ’16, Russian Area Studies; Nicole Nekhi’ C. Rodriquez ’19, Undeclared; Manal Mubakher ’18, Economics; Amanda L. Keady ’17, Undeclared

**Advisor:** See-Hae Lee, East Asian Languages and Research

In KOR206: Intro. to Korean Language and Culture, we traced the trajectory of Korea’s identity from the country’s origins to the Korean Wave and developed our understanding of Korean history, culture, and society. By taking this course, students had the opportunity to examine diverse aspects of Korean society, from daily life to the spread of Korean culture and the diaspora. The topics of our presentation highlight varied subjects within this multifaceted culture. They include media representations of North Koreans in South Korea, an assessment of the unlikely political and cultural relationship between South Korea and Cuba; an exploration of the anti-Korean movement’s impact on Japanese legislation and Korean sentiment in Japan; and an investigation into how Korean ethnicity is preserved and reshaped by the Korean diaspora communities of post-Soviet Central Asia. Overall, our presentation seeks to illuminate Korean identity and culture from internal and external perspectives.

**Cold War Poetics: Defiance in the Margins (Panel Discussion)**

**SC1-450**

Cathleen McGovern ’16, Music

**Advisor:** Gourminder Rughol, Music

Music is impacted by and impactful of the world around it; apartheid was on era too not too long ago, yet a time that completely changed the lives of everyone in South Africa and beyond. Without us, specifically music of the home and children’s lullabies opens up a new vantage point from which to view the healing process and see how South Africa is moving forward. This performance will look at lullabies around the world, centering in on three self-transcribed and arranged Zulu lullabies.

**Science and Technology**

**Nanoscience: Cancer, Drugs, and Other Innovations (Panel Discussion)**

**SC1-396**

Ann W. Chinn ’17, Biochemistry; Olivia K. ‘17, Biology; Kathleen E. Chen ’17, Sociology/Chemistry

**Advisor:** Nolen Flynn, Chemistry

Nanoscience is an expanding field of scientific research. Within the field, gold nanoparticles are particularly interesting because of their unique physicochemical properties. In this panel, we will discuss gold nanoparticles for biomedical and bio-chemical sensing applications. Gold nanoparticles (AuNPs) can be tailored to create a multifunctional nano vehicle for “smart” cancer treatment. Our nano vehicle consists of a gold shell in which we can attach molecules for targeting cancer cells and treating the cancer. We will examine the construction of these particles and their stability in physiological model systems. In addition, AuNPs can be used as a template for creating hollow nanospheres, which have attracted attention recently because of their potential application in catalysis, separation science, and drug delivery. We aim to improve the structural integrity of currently all-organic hollow nanopillars by incorporating inorganic materials that are stable under highly acidic conditions during the synthesis of these particles.

**MuSme (Panel Discussion)**

**SC1-524**

Ann Tidjani ’18, Undeclared; Precilla A. Lui ’18, Computer Science; Elden Cho ’16, Neuroscience

**Advisor:** Ort Shurr, Computer Science

Music is a beautiful medium through which children can artistically communicate and express themselves. The complex association with operating traditional instruments, however, often discourages young children from playing music. In an effort to democratize music making, we propose MuSme, a tangible “skin suit” that reimagines a user’s limbs and organs as metaphorical representations of different instruments. Rib, for example, are reimagined as the wooden panels of a saxophone, while the veins of a child’s wrist come to represent the strings of a guitar. By using electrically conductive paint as a substitute for wires, which have a tendency to tangle, MuSme fosters the illusion that music moves through the child’s body. Furthermore, because our interface eliminates the mundane technological aspects associated with making music, MuSme empowers children to creatively express themselves with their very own bodies. With MuSme, children don’t just play music. They become music.

**Geology of the Built Environment (Panel Discussion)**

**SC1-377**

Geoff L. Gallagher ’17, Individual Environmental Chemistry; Emma Van Suy SD, Undeclared; Rosalia M. Sharp ’16, Environmental Studies; Hannah C. Davidson ’16, Economics/Environmental Studies; Amanda B. Hernandez ’18, Environmental Studies; Harley N. Jones ’17, Environmental Studies; Hannah Otteng ’17, Geosciences; Alexis Correia ’18, Biological Sciences; Katrina Shu-Side ’18, Environmental Studies; Kimberly Chia Yan Min ’19, Undeclared; Meredith Blake ’17, Environmental Studies/History; Valentina Vapone ’16, Environmental Studies

**Advisor:** Daniel Bunkers, Geosciences

Research in our lab blends environmental geology with environmental justice, focusing on the fate and transport of metals and herbicides to better understand exposure risks. The goals involve designing best practices to promote urban agriculture, identifying geological processes associated with contaminant biomagnification, and exploring education and outreach models with our community partners. Our group of transdisciplinary researchers with majors ranging from geosciences, environmental studies, environmental chemistry, biology, to history is currently working on projects that span analyzing lead in soils and fruits to analyzing herbicides in rambutans. We will share current case studies and offer tools to the audience that can be applied to a range of environmental health challenges. Our different disciplinary and research backgrounds strengthen our ability to approach complex urban geohydrologic systems. By conducting our research in this uniquely collaborative setting, our project outcomes are expanded, often with immediate implications for public health.
be used to separate their signal from the background noise. We are testing a new type of directional dark matter detector that incorporates a Micro-Mesh Gaseous Structure (MicroMegas) Detector, a fast, high-gain ionization detector widely used in high-energy particle physics. The structure, function, and initial testing of this novel approach to dark matter detection will be described.

From Quantum Materials to Pendulums: Finding the Intersection Between High-Level Research and Introductory Physics
Carolyn S. Martin ’18, Undeclared
Advisor: Robert Berg, Physics

Although research is an essential part of an education in physics, it can be difficult to develop independent projects for students with experience only in basic classical mechanics. This year, part of Wellesley’s SERP, I worked with Professor Berg to find an overlap between my introductory-level physics experience and his research using lasers to explore quantum properties of Na vapor in diamond. My project was designing and building a high-resolution polarization beam switching mechanism using a pair of lasers, an optical table, and coding. I was able to develop a wide variety of skills, from basic electronics to engineering to computer modeling. The project was an exercise in research skills, with the goal of making physics research accessible. This talk will focus on the importance of early research opportunities, even when the topics of research are based on introductory courses.

Thoughts About Thought: Computations of the Brain (Short Talks)
GRH-330

The stratum is an important part of the brain that is the focus of this research. The research suggests that the stratum plays roles in motivation, decision making, and evaluation. It is therefore key to understanding a wide range of mental disorders, such as anxiety and depression. By modeling the stratum, we hope to gain insights into how the stratum contributes to these disorders. The research is currently ongoing and is expected to be completed by the end of the academic year.

Perspectives From the Freedom Project IV: Rethinking Criminalization of Prostitution (Panel Discussion)
SCI-274

Exploring Cape Malay Identity Through the Lens of Food
Alyson E. Ang ’17, Sociology
Advisor: Tracey Cameron, Office of International Engagement

Made up of South African descendants of slaves from India, Madagascar, Indonesia, Malaysia, Mozambique, and other places, “Cape Malay” is a very contentious identity. In this project, I use a combination of secondary research, observations, and interviews with Cape Malays to explore the extent to which they feel connected to their slave heritage. I look at Cape Malay

The United States, most of the individuals (69 percent) prosecuted for prostitution are the women offering the service. Women bear an unequal amount of the legal burden in countries with policies like the United States’. The alternative is what has been called “the Swedish model.” This model, which has been adopted by Norway, Iceland, Canada, and Northern Ireland, has taken the legal act of selling sex but criminalized buying sex, pimping, or operating a brothel. Our panel analyzes the social and economic implications of the adoption of these new policies.
identity through the lens of food, as food is an important marker of tradition and culture. Through my research, I find that although there are many aspects of slave ancestry that can be found in Cape Malay culture, Cape Malays today identify more with their distinct South African identity rather than with their slave heritage.

La lotería de la vida: A Family Ethnography
Cassandra Flores-Montano ‘16, Women’s and Gender Studies
ADVISOR: Irene Mato, Women’s and Gender Studies

This ethnographic research project served as the final for Professor Matz’s Crossing the Border: Narratives of Transgression seminar. I interviewed and transcribed their stories as they related to education, immigration, and deportation. I also created numerous cards to accompany each of their stories. Although lotería is a game of chance, I do not mean to imply any randomness in the ordering of the cards and the stories they relate. I found that their experiences were firmly rooted in their previous identities as undocumented immigrants from Mexico to the United States. I learned of the materials that were read and discussed in the seminar to contextualize their stories within greater systems of oppression. I consider this work to be a small component of a greater decolonial project, which privileges the voices of a historically marginalized people by centering and engaging their narratives.

A Shared Experience
Grace Y. Park ’16, American Studies/Political Science
ADVISOR: Kathleen Brogen, American Studies/English Department

The immigrant experience, though diverse and transnational, is universal, and time, is often best understood through the stories of those immigrants themselves. A critical analysis of key works in the genres of memoir and diaspora literature led to previously undiscovered points of intersection for immigrants from Asia, Africa, South America, Europe, and beyond. My research seeks to make sense of these connections and their broader implications on the purpose and use of immigration stories in defining or decolonizing the immigrant identity. Analyzed works include Chang-rae Lee’s Native Speaker and Junot Díaz’s The Brief andWondrous Life of Oscar Wao.

Reflecting on Roots: Exploring the Salience of African-American Ethnicity in an Increasingly Diverse Black America
Tamar Davis ’16, Sociology
ADVISOR: Joseph Sowell, Sociology

Between roughly 1910 and 1970, the sociopolitical landscape of the United States dramatically changed as over 6 million African-Americans left their homes in the rural South to create new lives in the North, Midwest, and West. This movement, known as the Great Migration, represented what author Isabel Wilkerson describes as “the first mass act of independence by a people who were in bondage in this country many years longer than they have been free.” Decades later, toward the mid-20th century, the Black community experienced another demographic shift as immigrants from the Caribbean and Africa began to migrate to the United States.

Self-Love in Aristotle’s Nicomachean Ethics and Eudemian Ethics
Claudia Yao ’16, Philosophy
ADVISOR: Christine Garrison, Philosophy

Aristotle’s ethical theory focuses on how we ought to live and what constitutes a flourishing life. Motivated by the common intuition that nobody would choose a life without friends, Aristotle presents a theory of friendship, explaining what it consists of and the role of friendship in a person’s life. He lists the following features of friendship, among others: a friend wishes and does good or apparent good to her friend for the friend’s own sake, spends time with her friend, and shares her friend’s enjoyments and distresses. Drawing from Aristotle’s books on friendship, the Nicomachean Ethics and the Eudemian Ethics, I offer an interpretation of Aristotle’s account of self-love and consider how self-love differs from selfishness, friendship with oneself, and wishing well for oneself. Equipped with an understanding of self-love, I examine the role of self-love in the lives of virtuous agents and consider whether various people can be self-loving.

Real and Imagined Relationships (Short Talks)
PNE-127

Queen and King of the Playgrounds: Understanding Gender Roles in a Preschool Classroom
Shelby [First name] ’16, Psychology
ADVISOR: Bethany Horsay, Psychology

Gender is one of the most complicated identity traits to model, investigate, and comprehend. Any adult will tell you that an individual’s gender identity involves physiology, clothing, behavior, occupation, cultural values, societal norms, and personality differences. Young children cannot appreciate this level of complexity, yet when asked to describe themselves using only one word or phrase, children choose gender over race, ethnicity, and even age. Right from the start, gender plays a predominant role in our developing sense of self. One of the primary vehicles that children use to explore and learn about gender is play. My psychology honors thesis explores the relationship between young children’s formation of and adherence to gender stereotypes, their preferences for specific activities, and the narratives they create during play.

How Our Irritable Selves Read the Emotions of Others
Alexandra [First name] ’16, Psychology
ADVISOR: Christian Dwyer, Psychology

Children with chronic and severe irritability demonstrate marked problems in their relationships. These difficulties may be due to an impaired ability to recognize and interpret emotions in others’ facial expressions (e.g., misinterpreting a neutral expression as argumentative) and could lead them to act in ways that are surprising or annoying to others. To better understand the relationship between irritability and empathy, I conducted a study investigating whether a frustration manipulation (a proxy for irritability) impaired young adults’ identification of facial expressions. Participants were randomly assigned to a frustration or a non- frustration condition, after which they were shown three sequences of facial expressions changing from neutral to an emotion. Irritability is expected to impaireng general empathy and ability to recognize other people’s emotions. Misinterpreting a neutral expression as argumentative under an irritability condition may be more difficult than under a neutral condition. The study, which used an unselected group of undergraduates, was designed in hopes of informing future studies of more representative and clinical populations.

Remembering the Imaginary Memory for Imagined Relationships and the Connection Between Fantasy Orientation and Social Ability in Adolescents
Grace E. Bennett Pierre ’16, Psychology
ADVISOR: Tracy Glazier, Psychology

Creating an imaginary friend is a common occurrence in early childhood. However, the relationship between creating imaginary friends as a child and having an interest in fantasy later in development is an open question. Similarly, although having an imaginary friend in early childhood is puzzling, how fantasy orientation relates to social ability after life is unknown. For my thesis, I interviewed adolescents who participated in a study about imaginary friends they had when they were pre-schoolers. I predicted that the age at which a child created an imaginary friend and family elaboration of the friend would influence whether adolescents remembered their imaginary friends later in development. I expected this to be positively associated with Theory of Mind ability. Results from this project will contribute toward our understanding of the continuity and change in imaginative orientation. (Supported by the Psychology Department and the Office of the Dean of the College.)

Imaginary Companions: Complexity and Relationship Type
Hao Jun Lee ’16, Psychology
ADVISOR: Tracy Glazier, Psychology

Preschool children’s imaginary companions (ICs) serve various purposes, such as providing social benefits, and vary in three dimensions: a) complexification (i.e., increased elaboration of the companion or personified objects), relationship type (i.e., egocentric or hierarchical), and completeness (i.e., is the companion real or fantasy). In my study, whether the IC interacts only with the child or with additional imagined entities. Previous research has shown that children’s relationships with their imaginary friends may be different, but whether relationship type is related to IC complexity has been relatively unexplored. Therefore, my research investigates whether relationship IC complexity is related to the type of IC relationship. An egocentric relationship may be more complex than a hierarchical relationship because the child treats the IC as an equal, which theoretically requires more sophisticated schemas and social skills on the child’s part. The complexity of ICs will be assessed through parent-completed diaries of children’s ICs and parent and child interviews, which provide information on how children interact with their ICs.

Integration, Reintegration, Disintegration (Short Talks)
FND-317

The Social Dimensions of War: Factors of Operational Success for Russia’s Military
Marina [First name] E. Daga ‘16, Political Science
ADVISOR: Stacie Goddard, Political Science

We all witness wars, but do we really understand what makes them successful or fail? What factors are integral to the success or failure of military operations? In the case of the contemporary Russian military, most scholars have attributed success in both Georgia (2008) and Crimea (2014) to a reformed and technologically improved military. Despite a widely accepted “victory” in Georgia, Russia’s military performed disastrously, which scholars analyzed as a series of reforms and modernization projects within the military. Many scholars have traced these reforms to the success of Russia’s operations in Crimea in 2014, citing superior technology and organizational learning. My thesis addresses the reality of Russia’s military operations in Crimea, and in the process, we must acknowledge that the traditional discussion of military strategy’s success. I argue that dependent more on existing social collaborations, intelligence networks, and Russia’s special operations forces, rather than an overwhelming conventional display of military force. I explore what we can learn about Russia’s military from Crimea, and what other conditions would make possible a similarly structured military operation in other countries bordering Russia.

What Fuels Political Violence? Analyzing the Effects of Natural Resources on Insurgency Warfare
Alice [First name] Y. Liang ’16, Environmental Economics
ADVISOR: Paul MacDonald, Political Science

Natural resources such as oil, diamonds, gold, and gems are typically seen as assets that strengthen a state’s wealth and power. But they may also weaken a state’s institutions, giving way to grievances, and natural resources often serve as a major funding source for insurgencies and their recruits. In my thesis, I ask, under what resource conditions does political violence begin, and under what conditions does it not? I analyze subnational quantitative analysis of political violence in Africa from 1997-2015. I seek to separate and understand these mechanisms. The results have policy implications for what forms of counterinsurgency, or what forms of tactical strategy, would be most effective in preventing or advancing, political violence. (Research supported by the Jerome A. Schiff Fellowship.)

When Heads Roll: Assessing the Effectiveness of Mexico’s Decapitation Strategy
Dela M. Aran De Leon ’16, Political Science
ADVISOR: Stacie Goddard, Political Science

In December 2008, Felipe Calderón became Mexico’s 36th president, and immediately deployed thousands of military troops to combat the growing spread of the Mexican drug cartels. An unprecedented increase in violence ensued. Critics have labeled the Mexican government’s strategy ineffective and counterproductive, particularly because of its overreliance on the military and on leading to a debate on the effectiveness of the strategy. I contend with the literature on two points. First, I assert that a majority of critics fail to take into account the extent to which Mexican institutions suffered from severe corruption when Calderón took office and lack a thorough analysis of alternatives. Second, and most importantly, I question the primary measure that scholars have used to evaluate the success of this strategy—an increase in levels of violence following leadership decapitation—and seek to lay out alternate measures to assess the strategy’s success.

Integration of Syrian Refugees in Jordan
Andrea P. Aguilar ’16, Political Science
ADVISOR: Stacie Goddard, Political Science

The most recent figures released by the UNHCR puts the number of Syrian refugees residing in Jordan at about 630,000, a figure that accounts for nearly 10 percent of Jordan’s total population. Not surprisingly, the inflow of Syrian refugees has put a strain on the country’s economy and social services, making it costly for the government to effectively respond to the crisis. However, after more than four years since the start of the crisis, Jordan remains one
of the most stable countries in the region. What explains Jordan’s relative stability in the face of one of the worst refugee crises of the modern era? For the past year, I have tried to answer this question as a thesis student in the Political Science department. My experience has been eye-opening, both on an intellectual and a personal level, as I have had the opportunity to conduct field research in Jordan and discovered the value of independent learning.

Shakespeare Society: Twelfth Night and Much Ado About Nothing (Short Performance)

JAC-450

Katherine (Kate) M. Buser ’16, Theatre Studies; English; Bayou S. Winterwood ’16, Cognitive and Linguistic Sciences/Theatre Studies

ADVISOR: Deeje Waring, Theatre Studies

The Shakespeare Society presents scenes from this year’s plays: Twelfth Night, directed by Katherine Buser, and Much Ado About Nothing, directed by Rowan Winterwood.

Year Zero: A Visual Narrative of the Cambodian Genocide (Exhibition)

SCI-266

Jalea S. Un ’16, Economics

ADVISOR: Phyllis McGibbon, Art

Year Zero is a visual narrative that explores, in alternative methods of biographical storytelling as well as an ethnographic research project focusing on the Khmer Rouge genocide (1975-1979) and the subsequent Cambodian diaspora. Year Zero is intended to educate and reveal in an intimate manner four years of a family’s struggle to survive under conditions that killed over 1.7 million Cambodians. Through the lens of the daughter of a refugee, the story will be revealed to viewers of visual interpretations of the stories shared by her family as well as records of candid conversations in which she learns her family’s history.

Stratified Elevations (Exhibition)

SCI-264

Zheng (Wanwen) Fei ’16, Art Studies

ADVISOR: Andrew Mowbray, Art

A house designed and built in a computer game, The Sims 4, is transformed into an architectural design project and then an experiment in visual representations of architecture. Two elevations of the house were selected and stratified by material into layers of illustration boards. Layers are colored by the corresponding materials and are organized by the order of distance away from the view plane. The elevation drawings look as if they are flattened, yet subtle shadows cast on each layer constantly remind viewers of their three-dimensionality.

Science and Technology

Characterizing Structures and Functions of Histone-Derived Antimicrobial Peptides via Experimental and Computational Methods (Panel Discussion)

GRH-320

Amy Yuan ’16, Chemistry; Liz Wie ’16, Biochemistry; Senlin (Hannah) Sun ’16, Individualized Physics; Carla Pires ’17, Chemistry; Sang Hyun (Sang) Lee ’16, Chemistry; Dana M. Figueroa ’17, Biochemistry

ADVISOR: Donald Elmour, Chemistry

The Elmour lab is interested in studying the structure, potency, and mechanism of action of antimicrobial peptides (AMPs), a novel class of antibiotics. Histone-derived antimicrobial peptides (HDAPs) are one class of AMPs that are derived from histones, which are proteins best known for packaging nucleic acids in cells. While AMPs are known to either permeabilize the membrane to induce cell lysis or translocate across the membrane to interfere with intracellular processes, little is understood about the specific binding targets. The lab is in the process of developing computational models with molecular dynamics and experimental approaches utilizing confocal microscopy, cellular assays, and spectroscopic measurements to investigate mechanisms of action. By modifying and studying the relationship between peptide structure, amino acid composition, and peptide function, the Elmour lab hopes to improve the therapeutic potential of AMPs in a clinical setting.

Molecular Matching: Using Computational Techniques to Study and Design Perfect Protein Matches (Panel Discussion)

GRA-330

Tade G. Nyang'one ’16, Chemistry, Nusrat Jahan ’16, Chemistry; Diane Chen ’17, Chemistry; Yiye Yuan (Yae) Liu ’17, Chemistry/Mathematics

ADVISOR: Madhukar Paranjape, Chemistry

Humans aren’t the only ones with commitment issues. Proteins sometimes can’t seem to bond and stick well to their biological partners, either. By using computational techniques, the Radhakrishnan lab studies biological systems and properties that may be difficult to study experimentally. Through various computational methods, we aim to model drug-protein systems and study the determinants of protein binding. Taken together, we hope our work provides more insights into protein interactions and offers suggestions that can be tested experimentally to enhance the process of biomolecular matchmaking.

Vision and Art: Independent Interdisciplinary Investigations of the Human Visual System (Panel Discussion)

FND-320

Nancy A. Zhang ’16, Mathematics; Alex Johnson ’16, Neuroscience; Jessica N. Klemens ’16, Neuroscience; Hai C. Fuller-Becker ’16, Neuroscience; Amanda B. Rath ’16, Neuroscience; Sydney M. Caza ’16, Neuroscience

Our neuroscience course, Vision and Art, was an interdisciplinary investigation of the human visual system incorporating physiology, art, and neurobiology. We used visual art to motivate our examinations of the fundamental physiological and computational processes of vision. Harmoniously understanding the integration among various components of the visual system provides a unique framework for how we view and create art. Panelists integrated their diverse interests with their inquiries of the visual system through a term project. The topics of the panel include: investigating racial dehumanization of black women by tracking eye movements upon viewing images of black and white men and women; performance of computer vision algorithms on face detection in Cubin art; effects of color association of familiar objects on color memory; music-color association mediated by emotion; color and emotion relation; and determining the innate or learned nature of color memory.

Science in the Great Outdoors (Short Talks)

SCI-277

Evaluating the Potential of Alkaline Battery Oxide Powders to Reduce Lead Mobility in Urban Agricultural Settings

Joseph T. Sab ’18, Environmental Studies; Cassandra G. Gallagher ’17, Individual-Environmental Chemistry

ADVISOR: Daniel Kaniewski, Geosciences

Urban agriculture in many Boston communities increases food sovereignty, strengthens community ties, and promotes youth leadership development. However, elevated levels of the nonmetal lead in urban soils require the development of best practices to minimize exposure. Alexander will explore the potential of alkaline battery oxide powders to reduce the resuspension of highly contaminated fine soils and may alter the geomobility of lead. We are investigating the use of manganese oxide (MnO) to reduce the geomobility of lead in various soil matrices. MnO is being sourced from spent alkaline batteries to minimize cost and repurpose the 3.5 billion alkaline batteries used annually in the U.S. We plan to conduct an accumulation study in compost soil, and a compost-mix soil mixture with and without MnO amendment. Since green leafy vegetables are commonly grown in urban settings and can bioaccumulate lead, we aim to further refine best practices for sustainable urban agriculture by exploring cost-effective and environmentally beneficial protocols.

Testing the Caldera Origin of the Blue Hills: U-Pb Geochronology of the Wampatuck Volcanics, Milton, MA

John C. Biddleston ’16, Geology

ADVISOR: Margaret Thompson, Professor emeritus

This project will test the published account that the Blue Hills Reservation granites and volcanic rocks are part of an ancient volcanic system. Calderas form when a magma chamber rapidly drains and the overlying rock collapses. If the caldera interpretation is correct, then the volcanic rocks in the Blue Hills must be older than the rocks (including the Quincy Granite and Hancock Porphyry) that would have crystallized in the chamber. U-Pb geochronology will establish absolute ages for these rocks and thus the sequence of events. The volcanics and Quincy Granite have already been dated. A new date from the Wampatuck volcanics will complete this data set.

3:00 – 4:10pm

The musical presentations were absolutely marvelous, and I loved the Book Arts presentation."

—Barbara Peterson Ruhlman ‘54

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Mellon Mays Research Imperatives II (Short Talks) SCI-274
Creating a New Vision: Reimagining Healthy Relationships Among LGBTQIAP+ Communities of Color and Narrating Complicated Histories of Domestic Violence
Gabriela Araner 17, Women’s and Gender Studies
ADVOCATES: Nancy Marshall, Women’s and Gender Studies; Odonio Gonzalez, English
Current narratives of domestic violence (DV) do not capture the reality of how intersectionality necessitates nuanced approaches toward advocacy. In October 2015, the TDG&O Collaborative, a coalition transforming access for LGBTQIAP+ survivors of color, launched their #FPUOLove campaign to spearhead a larger conversation surrounding DV within the community, bridging survivors to existing services and support networks, as well as reimagining healthy relationships and illustrating the many different forms abuse can take or what survivors of this abuse look like. In beginning to address the closeness of the circle, it is crucial to examine sites of agency and access created from these reimaginations. This inquiry explores the changing role of new representations of LGBTQIAP+ survivors of color in the context of my internship with the TDG&O Collaborative, as well as a reimagining of the canonical texts surrounding DV and the institutional, repeated erasure of LGBTQIAP+ survivors of color in canon.
Exploring Mental Health Perspectives Among African-American College Students
Christina Joseph 16, Anthropology
ADVOCATES: Monica Higgins, Environmental Studies
Wellesley College has long been committed to sustainability efforts, but given the continued threat of anthropogenic climate change, there is still far more to be done. In order to understand the magnitude of this institution’s current greenhouse gas emissions, it is necessary to first unpack the College’s historical emissions. This year’s Environmental Studies capstone class conducted an inventory of Wellesley College’s emissions in 2015, building onto the inventories conducted by previous capstone classes. Using a commercial carbon calculator, we estimated Wellesley’s 1990 carbon emissions and compared them to our footprint in 2003, 2008, and 2015. By educating stakeholders about our concern, we can further Wellesley’s commitment to cutting greenhouse gas emissions.

The Influence of Predatory Chemical Cues on the Foraging Behavior of Hognia Lenta Wolf Spiders
Elloe Patterson ’17, Biological Sciences
ADVOCATES: virtue Moore, Chemistry
Larger predators can influence smaller predators’ foraging behavior. This experiment, conducted as an independent research project under the advisement of the author, was designed to test whether or not the foraging behavior will be greatly inhibited by the chemical cues of larger predators, tarantulas. The chemical cues of tarantulas were obtained and placed in a testing arena with wolf spiders. Each wolf spider was tested separately to see if the tarantulas’ chemical cues would inhibit or encourage the wolf spider’s cricket consumption, the measure of successful foraging. Different factors of foraging behavior, such as time spent immobile, number of crickets consumed, and distance traveled, were analyzed to see how these responses were influenced by predatory chemical cues and therefore if successful foraging occurred.
for the inclusion of women and girls in STEM by providing essential hands-on learning activities in chemistry, biology, and physics to secondary students.

Public Education, Civic Engagement, and the Latinx Vote
Gabi R. Marquez ’16, Physics; Alejandro Cauca Miranda ’16, Economics/Latin American Studies; Andrea P. Aguilar ’16, Political Science

student activities: Domene March, Political Science

An abundance of research indicates a correlation between civic learning and voter participation. For most Americans, civic skills are developed and nurtured in school. But is everyone engaged equally? For our presentation, we will look at inequality in the public school system and explore the factors that inhibit political participation among Latinx youth.

We’re Only Human (Short Talks)

4:15 – 5:30pm

Interpersonal identity and Behavioral Motivations in Monogamous and Dizygotic Twins
India H. Kerle ’16, Psychology

student activities: Jula Howick, Psychology

This study examined a participant’s degree of interpersonal identity in relation to their friendships, sibling relationships, monogamous twin relationship, or dizygotic twin relationship. I found that monogamous twins had a stronger sense of interpersonal identity than any other relationship dyad. I also developed two new relational constructs that were examined within these groups: the “compensatory effect” and the “contrasting effect.” The “compensatory effect” refers to an individual’s motivation to de-identify from the other in the relationship dyad, while the “contrasting effect” refers to an individual’s motivation to protect the other in the relationship dyad. Monogamous twins demonstrated significantly less compensatory effect than any other relationship dyad. Results were inconclusive regarding the contrasting effect construct. Future studies should develop more reliable motivation measures in monogamous and dizygotic twin relationship dyads.

Leadership Camps: Effective Ways to Enact Long-Term Change?
Colleen A. Gable ’16, Psychology, Indra H. Kerle ’16, Psychology

student activities: Sally Howick, Psychology

This past summer, Professor Theran initiated an evaluation of the Girls Leadership Summer Program. The purpose of this project is fully understand the efficacy of this leadership program. Parents and their daughters were surveyed before and after the camp. Girls responded to questions about depression, self-esteem, family bonding, and self-compassion. Parents responded to questionnaires about time spent with their daughters and how they helped their daughters resolve conflict. By analyzing these data, we hope to learn more about the efficacy of this program. In addition to analyzing various psychological measures, we will consider demographic factors that may or may not influence the efficacy of this leadership program.

Shyness, Love-Shyness, and Individual Differences in Sexual Attitudes and Behavior
Ajay B. Randal ’16, Psychology

student activities: Jonathan Cheek, Psychology

Shyness is the tendency to feel tense, worried, or awkward during social interactions, especially with unfamiliar people. The term “love-shyness” was coined by Gilmartin in 1987 to describe the relatively small percentage of American heterosexual men who are single and never married, not by choice, but because of their shyness. Based on his interpretations of American gender roles, Gilmartin believed that love-shyness was predominantly a male phenomenon. However, his argument that love-shyness does not affect women lacked empirical support. For example, Wilson (1958) found that the majority of 500 unmarried women listed shyness as their main barrier to marriage. Since Gilmartin, there has been limited research on shyness and sexuality. Therefore, the purpose of my research is to examine gender differences within the relationship between shyness and sexual attitudes and behaviors. In this presentation, results of this study will be discussed, along with limitations and conclusions.

Mind-Wandering Tendencies in Younger Adults
Anita S. Srivastava ’16, Neuroscience; Hannah W. Cristofalo ’17, Neuroscience

student activities: Joseph Keller, Brain and Cognitive Science

Mind wandering has been the term used to describe when you are not paying attention to the task at hand. Our project has studied how individual differences in the brain contribute to mind-wandering tendencies in younger (20- to 30-year-old) adults. Mindfulness, which is considered the opposite of mind wandering, has been shown to correlate with higher attention and focus and reduce task-irrelevant thoughts. We have used cognitive assessments to determine individual levels of mindfulness and to assess certain cognitive abilities. We are using the Sustained Attention Response Task (SART) in coordination with functional magnetic resonance imaging (fMRI) to not only determine what differences can be seen on SART performance and task-irrelevant thoughts but also what parts of the brain are activated when those thoughts occur. Our results should give further insight into the neural correlates of focus and attention, which is important in everyday life.

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